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California State Journal of Medicine

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·BIOLOGIC DEPOT·H
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Subcutaneous...	2 c c.	1.40	1.00	.80	Eccentric Tip...	30 c.c.	6.75	5.35	3.75
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Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

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THE OATH OF HIPPOCRATES

I SWEAR BY APOLLO THE PHYSICIAN, and Aesculapius, and health, and all-heal, and all the gods and goddesses that according to my ability and judgment I will keep this oath and this stipulation—to reckon him who taught me this art equally dear to me as my parents, to share my substance with him, and relieve his necessities if required, to look upon his offspring in the same footing as my own brothers, and to teach them this art if they shall wish to learn it without fee or stipulation, and that by precept, lecture, and every other mode of instruction I will impart a knowledge of the art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none others. I will follow that system of regimen which according to my ability and judgment I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to anyone if asked, nor suggest any such counsel, and in like manner I will not give to a woman a pessary to produce abortion. With purity and with holiness I will pass my life and practice my art. I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption, and further, from the seduction of females or males, of freemen and slaves. Whatever in connection with my professional practice, or not in connection with it, I see or hear in the life of men which ought not to be spoken of abroad, I will not divulge as reckoning that all such should be kept secret. While I continue to keep this oath unviolated—may it be granted to me to enjoy life and the practice of the art, respected by all men in all times, but should I trespass and violate this oath, may the reverse be my lot.

ANNUAL MEETING IN SAN DIEGO

It is about time to begin planning for the annual trek to the meeting of the Medical Society, State of California. The war is really over. The arts of peace are flourishing. In scientific, social, and practical value, the approaching session already bids fair to eclipse any of its predecessors. There are some big problems to be reported on and some decisive lines of action to be determined. There ought to be two thousand doctors in attendance. It is worth it. For once, put yourself in the way of realizing that you belong to a big, upstanding, two-fisted profession. Get out of your rut. You are in one, whoever you are. Get out of it. Ruts hinder, and your perspective is curtailed by them.

Incidentally, there are several matters that have been appearing from time to time, and the times have been more frequent of late. Firstly, about papers and the program. The society is so large, and blessed with such an array of imposing talent, and the space of the session is still so short, being only three days, that not every member of the society, nor even every member who goes to San Diego, nor yet again even every member who applies for a place on the program, will be able to *secure* a place on the program. No more hard-working group can be named than your program committee, nor a group who deserve more sympathy and receive more knocks. If they succeed reasonably well in getting a balanced program of wide interest, do not feel that they are your personal enemies because you were perforce one of the three thousand who could not be got in the limelight this year. It is questionable if any doctor should appear on the scientific program two years in succession.

No one regrets more and probably none regret as much, as your executive staff that the *Journal* is not large enough to take care of the excellent scientific material arising in this state. It is no longer possible to publish even the papers pre-

sented before the State Meeting. Do you realize that the columns of the *Journal* have not been open to receive articles for publication directly submitted for over a year and a half? And yet, until printing costs adjust themselves, it is impossible to contemplate immediate enlargement. Last year over thirty state society papers were rejected for one of three reasons. They were too long. They were wretchedly written. Or else they were too technical, and the author joined in feeling that they would more properly appear in a more technical journal. If some kindly divinity would but endow each person on the coming program with a clear vision of the appearance he presents and the manner in which he presents his paper, and the fact that no one is heard, medically or otherwise, because of his much speaking, what a lot of time and stress we would all be saved. Be brief. Be clear. Speak loudly. Stop when you are done. Know what you are trying to put across.

Then there is the perennial rejuvenation of the desire to have stenographic reports of the discussions. Our Journal is too small. The best estimate of the cost of stenographic reports is in the neighborhood of two thousand dollars. Can't it be better spent, when we get it, than in reporting discussions? Until then, we must go to publication undiscussed.

Remember then that we will be a long time dead and that the meeting of the State Society offers a welcome oasis as we cross the sands of medical practice and the desert of earning a livelihood, and in these oases are to be found professional pabulum and spiritual refreshing, and good fellowship and a new vision of work well done and new duties pressing. Come to the meeting in San Diego.

INTERVIEW YOUR SENATOR AND ASSEMBLYMAN.

The Legislature is taking a constitutional recess. Senators and Assemblymen have returned to their homes and are ready to discuss pending bills with their constituents. The Legislature will not convene again until February 24th.

Now is the time to interview and inform your Assemblyman and Senator. The Journal is familiar with the facts and advocates the passage of Senate Bills Nos. 346, 401, 406, 408, 409 and 410. The first of these, Senate Bill 346, was introduced by Senator Anderson and regulates the incorporation, resources, equipment, faculties, and curricula of any school or college that purports to qualify applicants for a physician and surgeon certificate and a drugless practitioner certificate. One factor largely responsible for some of the pernicious measures that appeared on the November ballot and which were condemned as dangerous by a large majority of the people, is the present weak law of this State regulating the incorporation of colleges that purport to teach the healing art. It is the duty of the State to safeguard the health of its people and only men and women properly educated can safely be licensed to practice the healing art.

The people generally regard a diploma from a college, academy or university as certain evidence that its possessor has certain qualifications. A little learning is a dangerous thing in any of the professions, but especially so when applied to such precious possessions as health and life. Senate Bill No. 346 is a constructive measure offered by the League for the Conservation of Public Health in the interests of students who attend colleges in this State to qualify themselves to practice the healing art and in the interest of the people who will be attended by such students after graduation. In this effort to protect the public from unqualified service the League has the heartiest support of the great majority of people and the entire medical profession.

It is the public that is most interested, for it is the public that must suffer from the ignorance of the incompetents. The people of California have voted uniformly in their various communities for better schools. Educational standards have been raised all along the line except where some alleged colleges attempt to teach the healing art without adequate buildings, equipment, funds or faculty. These incompetent schools are the sources from which incompetents flow. Senate Bill No. 346 will stop the source and the flow will cease. It is a measure that should have the hearty support of all Senators and Assemblymen interested in educational standards as safeguards for the public welfare.

Senate Bill 408 is an act to repeal the general vaccination act for public and private schools. This act has been the source of confusion and useless expense. It does not seem practical of administration without much friction. The law requires that a child must be vaccinated or present a conscientious objector's card before he or she can be admitted to school. Many children whose parents recognized the efficacy of vaccination presented objector's cards and thereby created false statistics and increased the work and expense of City and State health departments. The establishment of exclusive districts for unvaccinated children created more work and expense. The repeal of the law will in no way interfere with the present powers of health officers.

Senate Bill 406, introduced by Senator Crowley, provides for the conduct, maintenance and operation of clinical, diagnostic, pathological and biological laboratories and the preparation, manufacture, standardization, sale or other disposal of serums, vaccines, antitoxins and other biological products. This bill was prepared after conference with leading medical authorities of the State and should not be confused with Senate Bill 479, which attempts to duplicate essential features of Senate Bill 406, but contains other provisions that render it of doubtful value.

Senate Bill 409 adds a new section to the medical practice act relating to the use and application of Roentgen rays, X-rays or Radium rays in the examination, diagnosis or treatment of human beings for diseases, injuries, deformities, etc. Many reasons for the passage of this bill will readily occur to everyone familiar with this subject.

Senate Bills 401 and 410 strengthen and clarify sections of the medical practice act. In Senate Bill 401 anesthesiology is introduced as a new subject with thirty-two hours in the course of instruction for a physician and surgeon certificate. In Senate Bill 410 the oral, practical or clinical phrase which was an indeterminate feature of examinations is eliminated.

Senate Bill 114, which is an act to provide for and regulate the examination and registration of nurses, will require definite amendments before it can be approved. We understand that the authors of the bill have had its defects pointed out to them and welcome amendments that will make the laudable purposes of the measure more certain. The medical profession and the public are devoted to the advancement of nursing in this state and nothing must be done that will hamper nursing in small or large hospitals. The law should embody definitely stated minimum standards, and the definition of "accredited schools" should be more clear and complete.

Is it advisable to create various classes of nurses? There are a number of other legislative measures that we will discuss in the next issue of the Journal. If any reader wishes fuller information on these or other bills affecting public health that are now pending before the Legislature, a letter addressed to The League for the Conservation of Public Health, Butler Building, San Francisco, will receive prompt attention.

BOARD OF MEDICAL EXAMINERS ABOLISHED BY ASSEMBLY BILL 347

On January 18th Governor William D. Stephens sent a special message to the Legislature setting forth, in general terms, an economy and efficiency program. It was stated that this program proceeded upon the fundamental lines recommended by the "Boynton Efficiency Committee" which, two years ago, after lengthy investigation, filed a comprehensive report upon the consolidation of many boards, commissions and other state agencies.

Eight bills were introduced to accomplish the administration's "economy and efficiency plan."

In the Governor's message what was referred to as "the seventh bill" to create a "Department of Professional Standards" was introduced as the first bill of the eight Efficiency Economy Bills in numerical order. We are not informed whether this was an accident, or whether it is considered of first importance, and should therefore be first considered.

It was introduced by Assemblyman J. R. White, Jr., of Los Angeles County, and is known as Assembly Bill 347. It abolishes the Board of Medical Examiners and merges it and all its essential functions with the Boards of Architecture, Accountancy, Dental Examiners, Embalmers, Library Examiners, Optometrists, Pharmacy and Veterinary Medicine.

A lay director shall have power, according to Assembly Bill 347, "to issue licenses for all of these professions, and to suspend or revoke licenses. He shall not be a practitioner of any of the professions under his jurisdiction, but shall select, for each examination and for each hearing, a board of three persons each of whom shall be a person licensed to practice in this state the profession concerned."

In this bill we first observe a fundamental departure from the recommendations made by the Boynton Committee on Efficiency and Economy. In that report sent by the Governor to the Legislature March 12, 1919, it was set forth as a fundamental policy that only "those agencies which perform similar or allied functions" should be placed under one executive head. The Board of Medical Examiners and some others were "left to function independently" and it was the opinion of the committee as "seriously questionable" whether or not "increased efficiency" would be accomplished by consolidating a number of boards that had no apparent common function. It was pointed out that the item of economy could not be urged "for the reason that all of these boards are supported by fees collected from the professions regulated."

"One science only will one genius fit, so vast is art, so narrow human wit," the scheme proposed in Assembly Bill 347 would have one lay "genius" handle Architects and Embalmers, Dentists and Accountants, Librarians and Veterinarians, Optometrists and Pharmacists with the scientific medical profession thrown in for good measure. It is obvious that this fanciful grouping is not based upon any close relationship between these boards or any similar or allied functions which they are competent to perform.

On whose advice was the Governor led to adopt this impracticable plan, placing a number of uncoordinated professional boards without common policy under the control of an unprofessional chief?

Excellent advice is available, and had the Governor's advisors taken counsel with those best qualified to give it on the most economic and efficient method to maintain professional standards for the protection of the public health, they would realize that Assembly Bill 347 contains vital defects. The chief purpose of the Board of Medical Examiners is to test the qualifications of those who undertake to treat disease in any form and to protect the public from unskilled and incompetent practitioners, from imposition by charlatans and quacks who make extravagant claims of ability to cure the sick and are a constant menace to the health of their victims and the community at large. The public as a whole is entitled to know that anyone licensed by the state for a profession which requires the highest skill, learning and character shall have these qualifications determined by competent judges, and that the incompetent and unscrupulous shall be excluded from practice no matter how loudly they clamor. No law must be passed for political expediency that will lower standards, admit the uneducated to practice, and thereby jeopardize the public health.

One of the arguments advanced in favor of Assembly Bill 347 creates deep concern. It is stated by some of its advocates that the lay director of the proposed department of professional standards may, under the terms of the bill, appoint examiners from any of the many drugless cults of Cali-

fornia—chiropractors, osteopaths, naturopaths, et al.—to conduct the examinations of the individual cultist applicant. It is said by some advocates of the bill that this would satisfy and still the clamor of the cults. What is of more vital importance is that it would nullify the will of the people expressed at the polls upon this subject and would menace public health. We trust that those who are interested in Assembly Bill 347 will study the election returns wherein the people decisively defeated all the anti-health measures proposed by the cults.

There are no cross-cuts to scientific education and there can be no compromise with the incompetent.

We have only the primary object—the protection of the public—in mind and not the offices nor the officers of the board. Has the independent Board of Medical Examiners demonstrated its usefulness? Is there any reasonable charge of inefficiency or extravagance against it? If the present performers are efficient, economic and experienced, and they are dismissed, and an untried plan substituted for them, there must be some other object beside efficiency and economy prompting the action.

The Journal would like to take the testimony of the advocates of Assembly Bill 347, for we favor any practical plan that will produce greater efficiency and economy in promoting and protecting the public health.

DUE PROCESS OF LAW
WHAT THE CULVER DECISION MEANS

The Christian Science Monitor—the international daily newspaper of the Eddyite cult—heads the first column of its first page of January 1st, "Medical Freedom Law Upheld by California Court—Right of Exemption from Physical Examination in Schools is Sustained," etc. If it were not the custom of the international Eddyite propagandist to print deceptive articles on medical subjects we would reach the conclusion that "the Monitor" was starting the new year wrong; but the misleading character of the headlines just quoted shows that "the Monitor" is functioning normally and has made no reform resolutions for 1921.

Now what do the essential facts presented in the record of the Culver Case admitted by both parties disclose?

Under orders of the chief of police of Berkeley, a policeman attached a placard on the premises occupied as a residence by Laura Culver. Her niece, D. N., a pupil at the Berkeley High School, resided with her. In the latter part of August, 1920, there were six cases of diphtheria and one death from that disease among the students of the Berkeley High School. On September 8th the local health officer issued an order to the Berkeley superintendent of schools to the effect that cultures from the noses and throats of all pupils of the school would be taken on that day by the board of health, and that those refusing cultures should be excluded from school until receiving written permission from the health officer to return. Eighteen of the pupils, including D. N., refused to permit the cultures to be taken. They were sent home and instructed by the school authorities not to return until they received permission from the health officer. After several days seven of these eighteen pupils, including D. N., returned and attended classes at the school, and continued, daily thereafter, to attend school without receiving any permission from the health officer. Cultures were taken from the throats and noses of 1300 pupils, and of those, 220 were designated as carriers. All but ten or twelve pupils of the school submitted to the examination. The local health officer communicated with the secretary of the state board of health, and in response to his request, on September 24th, he received from the said secretary a telegram reading as follows: "Quarantine following contacts with cases and carriers of diphtheria until they are determined not to be carriers of the infection." (Then followed the names of the seven pupils who had returned to school, including D. N.)

The placards placed upon the premises of six homes were not disturbed. The one on the Culver home was torn down. Another policeman placed a fresh placard upon the Culver premises which was immediately torn down.

The only act of Laura Culver in connection with the matter was the tearing down of the placard. "Whether this act," says Judge P. J. Langdon, the decision of the First Appellate District Court, Division Two, "which is admitted, was punishable as a crime or not is the *sole* question presented for determination." There is nothing in the decision upon "the right of exemption from physical examination in the schools." On the contrary, the decision clearly points out the broad powers vested in the board of health "to the end that epidemics may be avoided and the health of the people of the state preserved." The court declares "that every person who *after notice* shall violate or who *upon demand of any public health officer* shall refuse to conform to any rule, order or regulation prescribed by *the state board of health* respecting the quarantine of persons or places shall be guilty of a misdemeanor."

The Journal finds itself in hearty accord with this opinion. For a penal law or ordinance should be sufficiently definite for those affected by it to know their duty thereunder, and if not, it should not be sustained on the assumption that officers will exercise a wise discretion in enforcing it. "Before any citizen may be punished as a criminal it must be shown at least that a rule had been made by the board of health prior to the act sought to be punished as criminal, and such a rule must have been either so published as to give it the effect of a general rule of law, or knowledge of it must have been brought home to the person charged with its violation—"to warrant the punishment of Laura Culver for tearing down the placard it was incumbent upon the prosecution to show that a rule, order or regulation prescribed

by the state board of health had been made, and that the petitioner had notice of it or that she refused to conform to it upon demand of the health officer."

Laura Culver could not be punished for an act of her niece. "There was no order of the board of health, or its secretary, for the quarantine of the premises occupied by the niece. The order was that she should be quarantined. The distinction between the quarantine of a person and the quarantine of a place is clear—there is no rule providing for the placarding of the premises occupied by mere contacts, but only for cases of diphtheria or strongly suggestive of diphtheria. It is palpable that Laura Culver could not have notice of what did not exist."

In addition to all of these persuasive reasons the placard which caused the contention "did not meet the requirements of any form prescribed by the board of health, and it was not dated nor signed by anyone."

It is not surprising that those who deny the existence of disease and are religiously opposed to all health laws should misinterpret the scope of this decision. They fail to appreciate the importance or necessity of any health measures to protect society from disease. They also fail to appreciate that laws must be the same for all classes and must not be varied for particular individuals because they have peculiar beliefs or alleged political power. American law does not tolerate favored classes.

The good sense of mankind has definitely declared that there *is* disease, that certain diseases spread and can be checked, that no citizen, even though he may deny the existence of disease and death, can thereby secure any special exemption or privilege to endanger the lives of his neighbors, his children or the citizens generally.

This decision fully answers those political propagandists of the Eddyite and kindred cults, which are always denouncing the oppressive powers of health boards. It demonstrates that the judiciary will guard against the excessive use of power by health boards. If the individual health officer exceeds his power and trespasses on the rights of individual citizens they can hold him responsible. The acts of the health officer, like the acts of a judge, must be in harmony with due process of law. Neither can with impunity be arbitrary. Due process, however, is not necessarily judicial process. The powers and duties of the state board of health, in protecting society by warding off imminent danger of disease, would be ineffectual if, in emergencies, they had to wait on the formal proceedings of the courts, and the law's delays. This decision in no way limits the very broad powers entrusted to the board of health for safeguarding the public health. The highest courts have declared innumerable times that health officers who are required by law to use frequently emergency and summary measures to preserve the public health will not be prohibited from performing their essential lawful public duties. The courts deal with law and its interpretation. Judges are no more competent to diagnose disease than laymen not invested with judicial power.

Wherever it is necessary in the interests of public health to quarantine places or persons in future the state board of health will do so based upon facts and will administer the law impartially regardless of the prejudice of peculiar people whose conduct tends to nullify all health laws.

IPECAC—THE PANACEA AND CURE-ALL

While on the subject of drugs and improper drug advertising, it is appropriate to mention a brochure which has apparently been issued to physicians wholesale, on the virtues of a certain preparation of ipecac. Two questions arise in this connection. The first relates to the propriety, to say the least, of a reputable drug house circularizing the medical profession with reprints or excerpts from scientific articles. The proper place for the doctor to receive authentic scientific information is through his scientific societies and journals. Only here has he assurance that commercial desires are not coloring the matter presented. Only here has he suitable facilities for weighing the pros and the cons, and making impartial decision. The flood of commercialized scientific advertising now in vogue is not in good taste, is unscientific and may be most dangerous. The doctor is always safe in consigning to the waste-basket at once all such "literature" as fast as it comes to hand.

In the second place, is to be considered the actual merit of the claim that ipecac is of such wide service as claimed in the advertising in question. We remember only a few years ago, upon the clinical introduction of emetin, how this drug was lauded as a specific and a quick specific for amebic dysentery. We know now that emetin alone does not cure amebic dysentery. We know that the clinical test of such cure is dangerous for the patient and all too often unsuccessful. Amebic dysentery is increasing fast in non-tropic countries and is a disease of serious consequences and often most difficult or even impossible of cure even with the most approved forms of treatment. Its treatment is never to be undertaken lightly. The only test of cure is repeated negative examinations of the stools over a considerable period of time, and this examination must be directed by an expert in the identification of amebic cysts.

It is unsafe at the present time to advocate ipecac for tonsillitis, typhoid, pertussis, spastic constipation, spasmodic croup, asthma, arthritis or any of an almost indefinite list of diseases for which it has been recommended. For example, it has had strong support in tuberculosis. The use of ipecac as an anti-spasmodic has not yet been divorced in the minds of scientific men from its more primary action as an emetic. This action is often employed to advantage, but it is well to realize that the effect sought is a result of a mild degree of nausea which may be so slight as not to rise to consciousness. Any brochure advocating ipecac in a series of diseases other than amebiasis, should, if honest, state the symptoms and constant dangers of ipecac or emetin poisoning. This poisoning is a matter of serious consequence and the unskilled use of this drug may easily invite trouble.

We are afflicted with a plethora of claims and advertising of drug preparations. Most of it is an insult to the intelligence, honesty and education

of the physician. The modern doctor is using fewer and fewer drugs, and the stimulated interest in drug using inculcated by drug concerns is to be condemned unreservedly. Commercial salesmanship, while laudable in most lines, must observe the strict proprieties of real service, absolute honesty and complete deference to the scientific training and ideals of physicians, if it is not to fall into disfavor as a whole. Useful drugs should be purveyed to the medical profession not by an advocate but by a guarantor of quality alone. We do not go rightfully to the drug house to learn our therapeutics nor do we thank the drug house for seeking to do our thinking for us.

FULTON'S COMPOUNDS

Physicians have received within the past year literature purporting to emanate from the John J. Fulton Company, San Francisco, extolling the virtues of certain preparations in glycosuria and albuminuria. The preparations are for sale, it is said, by all important wholesale drug houses. Extravagant and unsupported claims are made for these preparations, extravagant in that they claim or suggest improvement in all cases, even when all other methods have failed, and unsupported in that no controlled scientific laboratory investigations are reported.

Space is devoted to the matter here simply to advise physicians to leave these nostrums alone. Their formula is not given, in spite of the printed claim that it is not a secret preparation. Even direct written request to the company failed to elicit any definite statement disclosing the formula. There is no reason to believe that the preparations have any virtue in the conditions advertised. The method of advertisement is unethical, in that a secret nostrum is extolled for serious and common diseases, and no opportunity is afforded for control of the statements made.

There is no reason for believing that these nostrums are any whit different from the "Fulton's Compounds" described in "Nostrums for Kidney Diseases and Diabetes," issued by the American Medical Association in 1917. The usual story came out then, showing how case after case which had "testified" as to the curative virtues of these nostrums, had a little later died of their diseases. Nothing is easier to get than unimpeachable testimonials, and nothing is more worthless. The serious danger lies in a commercial concern advertising self-treatment for such dangerous diseases as nephritis and diabetes and bolstering up its claims by specious testimonials and unworthy medical evidence.

In the absence of any indication of scientific merit in these nostrums, and in the absence of any indication that they differ in content or advertising from the "Fulton's Compounds" of four years ago, it is much to be hoped that no physician will be deluded by their claims or lend a credulous ear to their appeal for exploitation. Under no circumstances is a physician justified in giving a preparation of unknown formula to his patient.

The following paragraph from the Journal of the American Medical Association of January 29, 1916, ought to be re-read and deeply pondered by each physician: "Thus, on a foundation of misrepresentation, fraud and deceit is reared the stupendous superstructure of the 'patent medicine' business—a trade whose millions corrupt legislatures, prostitute no small portion of the press and are a standing menace to the public health. Some day an enlightened public opinion will demand the destruction of this evil—and the dawn of that day is not very far off."

Editorial Comment

The wonder grows that any legislative body can appropriate huge sums for repairing the damage wrought by disease, and yet almost ignore the known means of preventing disease. Public health is purchasable, and is a vastly better public bargain than treatment of disease and death.

You will find about as many doctors friendly to you as you treat like friends. Sir Francis Bacon said that words of praise and recognition were becoming in the mouth of a friend but might be most unseemly in one's own mouth.

Someone should estimate the proportion of the fear of disease which is due to patent-medicine advertising. An enlightened press will yet put these vipers out of business.

The well man is entitled to as skillful diagnosis and advice as the sick man. Does he get it? A clinic for the well, and periodic physical examination, are among the best insurance measures which have yet been proposed.

Noguchi has prepared successfully a vaccine against yellow fever which is now being used to good advantage in the endemic zones. Persons who have been successfully vaccinated with this material are no longer subject to yellow fever quarantine detention in Central America.

County societies and smaller groups will be interested to know that lantern slides and movie films on health topics can be procured from the State Board of Health, the only charge being the prepayment of expressage both ways.

Slides may be had on tuberculosis, child welfare, and communicable diseases. Also films on the following subjects:

"How Life Begins"—4 reels
"War on the Mosquito"—1 reel
"The Trump Card," on milk pasteurization—2 reels
"The Error of Omission" on birth registration—1 reel
"The Rat Menace"—1 reel.

For information relative to "How Life Begins" communicate with the Bureau of Social Hygiene, 214 Lachman Building, San Francisco, and for information relative to the slides on Tuberculosis communicate with the Bureau of Tuberculosis, 726 Forum Building, Sacramento. The other slides and films are on hand at the executive office of the State Board of Health, Sacramento.

Special Article

CONCERNING THE SIZE OF WOMEN

PRELIMINARY NOTE WITH SPECIAL REFERENCE TO HEIGHT

CLELIA DUEL MOSHER, M. D.,
Stanford University, Palo Alto, Calif.

A popular belief seems to be prevalent that women are increasing in size. This idea has, apparently, received some confirmation from the study of 4023 of the Stanford women who entered the University during the past thirty years.

This study has been limited to the entrance physical examinations, thus minimizing the influence of the college work; the number of graduate students included in these cases is probably too small to have had any great amount of influence. Thus this group of women is more nearly a fair sample of the population at large rather than of the more limited class who have the benefit of university training. Every available physical examination has been used which gave age, weight, and height of the women at their entrance physical examinations.

The romantic story of the founding of Stanford University gave its opening in 1891 a very wide publicity and attracted, not only students from California and the neighboring states, but also from the middle west and from the far east, both north and south. Only fourteen of the thirty years thus far have been analyzed with reference to the birthplace of the students. The curves for the Californians and non-Californians both show the upward trend of weight and height and the downward trend of the age curves.

The grouping of these cases in four age periods does not obliterate these curves, but shows the same general directions. The accuracy of these results is still further augmented by the fact that the investigator made the physical examinations in 1893, 4 and 5; from 1911 to 1918; and part of the examinations in 1910, 1919, and 1920-21. These years contain 1945 of the total 4023 cases included in this study, and are distributed in the first and second decades as well as in the last. Certain of the remaining records were made by examiners trained by the investigator, thus minimizing the element of error introduced by the personal equation in measuring. The curve constructed from the writer's own measurements shows the same upward trend for height as in the curve based on all of the cases for the thirty years.

The examinations are always made during all hours of the working day, and are usually concentrated in the first days of the opening of the semester or quarter. Thus it would seem fair to disregard the diurnal changes as having any very material influence on the results.

A statistical study has been made of the probable errors of the average heights for the years 1891-2, 1893-4, 1916-17, 1917-18, and the probable errors in the differences of the averages for 1891-2 compared with 1917-18 and for 1893-4 compared with 1916-17. All of the measurements of this last pair were made by the writer. This study shows that the average heights are based upon series which more than satisfy statistical requirements, and that the differences in heights in the contrasted pairs is so many times greater than the probable error of the differences as to afford statistical assurance of validity.

TABLE I. AVERAGE HEIGHT OF 4023 UNIVERSITY WOMEN IN YEAR GROUPS, 1891-2 to 1920-21 INCLUSIVE

University Year	No. of Cases	Average Height in Inches
1891-2	94	62.4
1892-3	91	63.2
1893-4	89	63.0
1894-5	124	63.3
1895-6	108	63.2
1896-7	127	63.4
1897-8	124	63.2
1898-9	124	63.2
1899-1900	117	63.5
1900-1	118	63.3
1901-2	104	63.8
1902-3	150	63.8
1903-4	102	64.7
1904-5	39	63.5
1905-6	78	63.6
1906-7	158	63.8
1907-8	180	63.6
1908-9	63	63.5
1909-10	133	63.9
1910-11	193	63.5
1911-12	131	63.7
1912-13	91	63.7
1913-14	146	63.7
1914-15	168	64.0
1915-16	178	63.7
1916-17	170	64.0
1917-18	238	64.1
1918-19	276	63.8
1919-20	157	63.6
1920-21	152	63.9*

*Examinations of women entering during the first and second quarters only.

TABLE II. AVERAGE HEIGHT OF 4023 UNIVERSITY WOMEN BY 10-YEAR PERIODS. (FROM TABLE I).

Years in 10-Year Periods	No. of Cases	Average Height in Inches.
1891-2 to 1900-1 (Inclusive)	1116	63.2
1901-2 to 1910-11* (Inclusive)	1200	63.5*
1911-12 to 1920-21 (Inclusive)	1707	63.8

*The average for 1903-4, which is obviously in error, is not included in this average of the second 10-year period. If this figure is included the average height for the second decade becomes 63.8, the same as the average for the third period.

To be well within the limits of safety we may disregard the average height for the first recorded year, since the abrupt change (62.4) for 1891-2 to the average for the succeeding years is so great as to excite some suspicion of its accuracy, especially as we have no data showing the relation of this low average to the averages of the years preceding.

We may, therefore, conclude, pending further investigation, that, as illustrated by the changes recorded in 4023 women entering Stanford University during the past thirty years, that the average height of the women of today has increased from one to one and one-tenth inches.

There is also a definite increase in the average weight. The detailed data of this part of the investigation will be presented in a later paper, together with the evidence which shows that this increase in weight and height has occurred in spite of the fact that the average age of the women entering the University has grown less. The racial as well as economic importance of these changes, which point to a more fully developed and more perfectly functioning type of woman, can hardly be overestimated.

RELATIONSHIP BETWEEN TRAUMA AND MALIGNANT DISEASE FROM AN INDUSTRIAL VIEWPOINT

W. OPHÜLS, M. D., San Francisco

Before entering upon a discussion of the relationship of trauma to malignant disease from the point of view of one who wishes to determine fairly the connection of an industrial accident with the subsequent development of a malignant growth, it may be well to look upon the question from a purely scientific standpoint and to ask ourselves what warrant is there to assume, that there may be such a connection.

It is common knowledge, that our information in regard to the etiology of tumor is woefully deficient. What the final cause of them is, if there is any single such, we do not know, but we are gradually learning to connect up the development of tumors with other types of proliferative processes of which we have a better understanding; may they be due to abnormalities in development, to inflammation, or may they be connected with the more normal processes of hypertrophy and regeneration. The general impression is, that any change which is associated with tissue proliferation may terminate in the development of true tumor. Other things being equal this transformation occurs the more readily the more actively the tissues are proliferating and the longer the tissue proliferation has continued. It is also evident that this transformation is fortunately a rare occurrence. Pathological tissue proliferations due to one cause or another are exceedingly common. There is hardly any human being, or any living organism for that matter exempt from them, but tumors we meet with only occasionally. It is this which has made many investigators feel, that something new must happen to convert these ordinary tissue proliferations into tumorous growths, but on close analysis may we not find, that the difference is merely a quantitative not a qualitative one, i. e., that after all the same process continues only in a vastly exaggerated form in a more or less predisposed individual? The existence of intermediate stages, where even the best expert with all modern technical means at his disposal cannot decide whether they should be classified as tumors or whether they still belong to the other pathological conditions mentioned seems to point this way.

From these theoretical conditions it will be evident that trauma can contribute to the development of tumors in so far as it causes tissue proliferation and, since any break in continuity, such as is likely to occur as a result of the trauma, is sure to be followed by regenerative and often by inflammatory proliferative processes, the possibility certainly exists that these may go on to the development of true tumors.

It would also appear, as if repeated and continued traumatic influences would be more likely to terminate in tumor production than a single trauma followed by a reaction of limited duration, and this surmise is amply born out by practical experience. The most numerous and best authenticated cases of post-traumatic tumor formation belong to this group. To mention but one example; so many cases of carcinoma arising in scars or chronic ulcers from old burns have been reported in literature, that there cannot any more be a question of the etiological relation of the one to the other, and the same is true, as we all know, of other types of chronic ulcerations of the skin and mucous membranes in the production and maintenance of which trauma may play an important role.

The relation of single trauma to tumor is much more doubtful, and it is quite generally stated that there is no case so far recorded in literature which proves this connection with scientific accuracy, but that there is sufficient evidence to make it justifiable to give to patients for whom the question of insurance depends on our decision, the benefit of the doubt.

It is interesting to follow the development of our knowledge in this field and to notice how gradually the circumstances under which such a connection is assumed have become more and more restricted, and our attitude toward the question more and more conservative.

Samuel Gross [1] in 1897 made the statement, that among the 144 cases of sarcoma of the long bones which he had been studying one-half of those in which the etiology was recorded were due to traumatism. They could be traced to blows, falls, kicks, sprains, fractures and other injuries.

A thorough discussion of the problem commences with an elaborate paper of Loewenthal,[2] from Bollinger's laboratory in Munich in 1875 which includes the presentation of 800 short case-records without much critical analysis of them, however. For this reason the majority of them are worthless from a scientific point of view, but at the same time he reports a considerable number of very interesting and suggestive observations as, for instance, several cases in which sarcoma developed at the site of old fractures and in old gun-shot wounds.

Coley [3] follows in 1898 with an article on the influence of injury upon the development of sarcoma. He studied 70 cases of sarcoma among which there was a history of trauma in 46 (27%). A careful analysis of the records of the 46 cases shows, that not more than one-half of them are fairly convincing. Coley develops the idea; that the trauma localizes the unknown cause of cancer as it is apt to do in infectious diseases like tuberculosis.

Another extensive, rather early publication (1906) on our subject is that of Roepke [4] who

reports on 800 carcinomata and 186 sarcomata. He also fails in the critical selection of his cases especially where a single trauma had occurred.

Since then with the introduction of protective legislation in industrial accidents in Europe and in our own country gradually certain rules have been laid down which must be fulfilled before the development of a tumor can be looked upon as the result of an industrial accident. The whole subject was thoroughly discussed at the second international conference on cancer at Paris in 1910, by Bérard [5] and by Thiem,[6] both eminent authorities in our subject in their respective countries.

These rules have been variously formulated, but there is a fairly good consensus of opinion on the essentials as follows:

1. The occurrence of the trauma must be proved.
2. The trauma must have been severe enough to appear effective.
3. The growth must develop at a place likely to have been injured by the trauma.
4. It must be reasonably certain that the traumatized part was normal before the accident.
5. The time elapsing between the trauma and the appearance of the tumor must agree with our scientific experience in the rapidity of the development of the particular kind of tumor under consideration. The time must not be too short, not less than several weeks, nor too long. The outside limit is usually given at about two years, but a reasonable connection may be assumed even in cases in which the interval is much longer, if there are symptoms which bridge over the intervening period.

Condition 4 is the one which is most difficult to fulfill, and it is the one which must be fulfilled, if a *scientific* proof of the causal relation of trauma to tumor is to be furnished.

Condition 5 is the one that is most frequently sinned against in decisions in regard to industrial accidents. This is especially true in regard to sarcomata of the bone. If a noticeable tumor in this region follows a comparatively trivial injury in a few days, it is almost certain that the growth preceded the injury. This is also true in cases in which the injury to the bone was unusually painful or caused more damage than one would suspect from its nature.

As a result of the more careful analysis of the cases the percentage figures of tumors really ascribable to injury has been decreasing very much. In his hand-book on "accident medicine," Kaufmann [7] states that there seems to be a reasonable connection between trauma and benign tumors in two per cent., between trauma and carcinoma also in about two per cent., and between trauma and sarcoma in five per cent. of the cases, and Loewenstein [8] in a very instructive article from Czerny's clinic informs us that the statistics of the Prussian army and navy from 1899-1907 reveal a proportion of one case of post-traumatic malignancy in 15,000 accidents.

Our general conclusion then would be, that a single trauma not followed by complications is a rare cause of tumor, and each individual case must be subjected to a careful analysis before arriving at any conclusion. It is evident, that for such an analysis the data must be as complete as possible and very specific in regard to the findings at the time of the injury and as to the events which followed. It is unfortunate that many physicians who treat industrial accident cases do not as yet seem to have learned this lesson. A roentgenogram taken immediately after the injury would clear up many a doubtful case.

After these general considerations I may be permitted to briefly touch on a few special points.

Of benign tumors produced by trauma there have been mentioned: fibroma, lipoma, neuroma, osteoma, and enchondroma.

Neuromata are always traumatic and are not true tumors.

Many of the so-called osteomata are also not true tumors, but are hyperplastic processes associated with bone development following injury to the periosteum and the adjoining soft parts. The bony growths in the muscles of the thigh following injury resulting from horse-back riding are excellent examples of this type of pseudo-tumor.

I also believe that the very nature of lipomata makes the possibility of a traumatic origin of them exceedingly doubtful.

Fibromata, on the other hand, occasionally result from trauma, and the number of fairly well-authenticated cases of enchondroma following trauma is really quite astonishing. In their case the question naturally arises, whether the trauma did anything more than to stimulate the growth of an already pre-existing abnormal mass of cartilage, perhaps a piece of this tissue which had been misplaced embryologically. From our general knowledge of these tumors this appears to be very probable, but even such an occurrence would entitle the patient to compensation.

Sarcomata are supposed to be due most commonly to single trauma, whereas carcinoma is said to follow more frequently repeated and continued injury.

Among all sarcomata the sarcomata of bones are most frequently referred to trauma and, theoretically, the interrelation seems quite plausible, because any injury to bone, and particularly a fracture, is followed by the most remarkably vigorous production of new tissue. In fact the callus-production is often so exuberant, that it is difficult to decide, even microscopically, whether one is dealing with normal regenerative processes or tumor. On the other hand we have to be especially careful in these cases, because, since these growths are usually situated deep in the tissues, attention is often first called to them by some injury, trivial or severe, as the case may be, and also the existence of sarcoma in the bone predisposes the bone to ready occurrence of fracture, and other disturbances which may follow injuries. Kaufmann [7] estimates that twelve per cent. of the sarcomata of the bones are of traumatic origin. On the basis of a careful scrutiny of the cases reported, I personally believe that this percentage figure is still too high, but even the most skeptical observer must acknowledge that there are a

certain number of reports of such cases which are thoroughly convincing.

There is quite a literature on the relation of the development of glioma and of gliosarcoma to trauma, ever since the possibility of their traumatic origin was first suggested by Virchow. On account of the location of these growths, a decision in this matter is especially difficult and often altogether impracticable. I believe that a careful consideration of the probable rate of growth of such a tumor compared to the time which has elapsed since the injury would be very illuminating in many of them.

With the malignant tumors of the internal organs we encounter the same difficulties, and in very few of them is it possible to establish, even with a certain degree of probability, that they are the result of trauma.

Of the carcinomata of the surface epithelium it has already been stated that they follow chronic injuries very much more commonly than a single trauma, and there are, indeed, very few reports in literature in which the latter seems to be at all likely to have occurred.

Among carcinomata, carcinoma of the breast is most commonly referred to trauma by the patients, and yet the number of even fairly convincing reports of its traumatic origin is so small that some who have made a special study of this problem assert that there is no evidence to connect the development of these tumors with trauma.

So far as I have been able to ascertain, the carcinoma of the testicle is the only type of carcinoma which is frequently caused by a single more or less severe injury. This includes the so-called round-celled sarcoma of this organ, because careful histological examination reveals that most of these so-called sarcomata arise from the epithelium of the seminiferous tubules and, therefore, should be classified as carcinomata. The frequency of their traumatic origin, to my mind, has not been sufficiently emphasized, but anyone who has had experience with these growths will readily confirm it from personal experience, and a study of the case-reports collected in literature reveals the same thing. When we consider the constant and very active multiplication of the spermatogenous cells under normal conditions we may readily understand why a thorough, even single disturbance of them may lead to such disastrous consequences. The mere fact that these growths are usually encountered in comparatively young individuals, in the prime of sexual activity, lends strong support to this theory.

It would appear then, that in estimating the probability of a connection between trauma and the development of a true tumor, the collective experience so far obtained in the particular type of tumor concerned should also be carefully taken into account.

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Original Articles

HOW CAN MEDICAL SERVICE BE IMPROVED?*

By MORTON R. GIBBONS, M. D., San Francisco.

To attempt to cover this subject in one quarter of an hour without making some form of explanation or protest might be to acknowledge that medical service can be very little improved, if any. The contrary is the case. It may be vastly improved.

There is no intention in this paper to offer any suggestions for improvement in phases of the law itself. Whatever offering is made deals with the machinery now in use.

My purpose is to take up for consideration a number of subjects, offering briefly some suggestions.

The importance of Industrial Medicine and Surgery is not appreciated by the rank and file of the profession. It does not embrace simply the treatment of industrial injuries. It embraces all the phases of social medicine. The colleges are establishing courses in the subject. It embraces a large proportion of the total surgical and medical work.

The societies are taking it seriously. Let the individuals do likewise. Let the individuals consent to understand the problems. There are still frequent signs of lack of understanding. Many men would be saved much unhappiness if they realized for one instant the difference between the Industrial Accident Commission and the State Compensation Insurance Fund and other insurance companies. Some doctors will take the statements issued to them and the assertions made to them by insurance companies as Gospel. The doctors always have the right to recourse to the Industrial Accident Commission for authoritative information and suggestions.

We can make our work more scientific by early physical examination of selected cases. The hardest cases to fix responsibility in are those in which a physical impairment is superimposed on an injury and outlives it. Osteo-arthritis, tabes, lues, age defects, nephritis, diabetes; there are scores of ailments which are included by the injury in the results of injury. The Industrial Accident Commission has proposed to require an early examination in all injuries in:

1. Persons over 60 years of age.
2. The infirm or those of poor physique.
3. Injuries to head or thorax or abdomen.
4. Serious injuries of any kind.
5. Injuries which may involve nerves.

The committee of the State Medical Society and the committee of the insurance companies con-

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

sider such an exaction inexpedient. The arrangement is that the surgeon will wait for authorization by the employer, insurance company or Commission, which will have been elicited by a suggestion from himself. A special fee is provided. It is devoutly hoped that surgeons will adopt this plan as a routine.

X-RAY EXAMINATIONS

A case has just been remanded by the Supreme Court to the Industrial Accident Commission for further consideration, because the Supreme Court, mind you, discovered a fracture involving the spinal column, not previously found because no previous X-rays had been taken.

The Industrial Accident Commission *requires* X-rays in all bone cases and *possible* bone cases.

We have among us as flourishing as ever the contract doctor. He works nominally for 20 or 25% less than Fee Schedule, and for actually 50% or more less than Fee Schedule, because the provisions for increase charges are not allowed him. His work is sold wholesale, and a contractor lives on the margin which he is entitled to for work done. Naturally, we don't expect high-grade surgery, treatment, or results, and we don't get them. Consideration of this matter is a neglected function of our Medical Societies. The pending advance in fees will produce a larger margin for the contractor and a larger number of contracts unless the Profession watches out.

Sometimes we see the result of poor surgery. Men poorly equipped will attempt to handle cases which are too much for them. Men who may be well equipped in some lines will be required by their contracts to handle cases they are not trained to handle. This happens especially in contract work. The remedy is obvious. The Commission may have to become "hard-boiled" to accomplish justice. A degree in Medicine is not enough qualification. No surgeon is too good. Is it not true that permanent disabilities cost more than the best surgery?

Poor surgery is not always attributable to poor surgeons. The fault of some most skillful surgeons is impatience. The recent army experience is teaching a telling lesson. Patient application of physical therapy will often effect a functional cure where radical surgery would have destroyed all chances of anything but a makeshift. The Commission demands *function* rather than *appearance*.

The rest of my paper will be devoted to phases of the psychology, or human nature of Industrial Accident Surgery, and to Physical Therapy and its branches. These subjects are closely interwoven.

Right psychology is probably lacking more often than good surgery. The Industrial Accident Commission sees a very large proportion of the traumatized neurasthenics. It feels that a large proportion of these unfortunate cases could be forestalled and the condition prevented by right and early treatment. There are many circumstances which conspire to produce these cases. Lack of unity of interest of the injured, the employer, or his insurance representative, and the surgeon is of great importance. Greatest divergence of interest comes from the injection of the middleman, or insurance carrier. There is too much business and too little sympathy. An employer may be wholly in sympathy with, and have a laudable desire to care for the welfare of, his injured employe, but the middleman, by his methods, with which you are all familiar, may prevent and block that interest and solicitude which would be of value.

Then there is delay in securing medical service This generally cannot be helped and in not many instances is it harmful except from a psychological standpoint.

Another point is that the surgeon apparently works for someone other than the injured man. He is paid by another and this fact tends to create suspicion in the mind of the injured. The suspicion may not be justified, but it is a reality to be coped with nevertheless. Choice of one's own surgeon would lead to contentment and would solve some of the difficulties. While this would help some difficulties, and the patient would be treated by one who has his confidence and who wants to please his patient, it is not practicable under present arrangements. Results in experience have actually been even poorer than through choice of physicians by employer. This is because the doctor so chosen has not felt a responsibility to the Law and the State which is necessary. The only alternative is for physicians chosen by employers to treat the injured in the same personal manner as though the injured were paying the bill and were the only one to be pleased. The doctor must show himself to be in sympathy with the injured and must show that he is his proponent. He must have the confidence of the injured.

Improper environment is another factor. The solicitous friends, in misdirected kindness, give the idea to the injured that he is terribly hurt. He is made to feel abused and that his injury is worse than it actually is. His lodges and unions serve the same purpose. (In connection with this last feature comes the incentive to get well or the reverse.. Sometimes the injured receives benefits which encourage him to invalidism. Red-blooded men are not susceptible to influence of this kind, but unfortunately we have all kinds to deal with.)

The surgeon, the insurance man and everyone who comes in contact with the injured must understand the power of suggestion and the particularly strong power of bad suggestion. There must be no antagonism; there must be a feeling of security in the mind of the injured. The injured must know his rights; should be advised of the probable course which his case will take; what payments he may expect, and what his condition is, very early in the course of his disability. I cannot understand the policy which prompts surgeons to impart no information to these patients. The very first thing that such procedure incurs is lack of confidence, and the belief on the part of the injured that the surgeon is concealing a condition which is probably very serious. It is hard for the Industrial Accident Commission to get these pre-conceived notions out of the patient's mind. It is a daily occurrence, that men come to

the Industrial Accident Commission having had fractures, for instance, not knowing what the character of the injury has been. The frankness with the patient which I advocate is not my own idea, but is the unanimous opinion of authorities who have much to do with these subjects.

Try to appreciate this situation. A man has received a severe injury, but one in which no permanent disability is likely to develop, a fracture, we will say. He is kept in ignorance of the nature of his injury. It comes time for him to work, which will do him the most good. It is the only thing which will forestall permanent disability. His joints are stiff from non-use incident to treatment. He is sent to work. The surgeon has said he can work. He has misgivings because he has pain. The surgeon says the pain is nothing, belittles it, and derides the man. The suspicion aroused by ignorance is confirmed by his own experience of pain and weakness which he is now sure the surgeon knows nothing about. He is now sure the surgeon has been wrong from the start. He is apprehensive, and if properly constituted, is from that time on a traumatized neurasthenic. How much better an early establishment of confidence, and a frank forecast of the case, and explanation of phenomena!

A convalescent is generally pitchforked into his work again. The line of demarkation between ability to work and inability to work is not a sharp line. It is a broad, hazy, and ill-determined zone. It depends on the disability,—the requirements of work—the character of the convalescent,—the character of the boss.

A form of irritation to which many of the injured are subjected is the attitude toward them and the treatment of them by insurance company representatives, representatives of employers and doctors. It costs nothing to be a human being in the treatment of one not so advantageously situated as one's self. It always strikes me that an individual who treats another in a cavalier manner is laboring under a species of defense reaction. It may be that he cares so little for other people that he prefers to show his contempt in that manner, but I am convinced that a great many people misbehave in an effort to show a superiority which they do not feel. It is an abuse of power which is cowardly. In addition to this, it is a waste of time. A sympathetic attention to one in an inferior position will elicit the desired information and expedite the desired business in a way which no other method of treatment can possibly do. "Contentment is realized only by those who work."

Interwoven with the subject of psychology is the whole group of physical and occupational therapy. It has been said, and the statement is probably substantially true, that the freedom of the army and navy casualties from traumatized neurosis was due to the environment. The results obtained can be attributed to the unusual environment and to the anticipation most of the wounded had, of discharge. The vast majority of soldiers have looked toward discharge from the army as their goal. There was a veritable stampede in this respect. The wounded have looked upon discharge as a prize for accomplishment of recovery. Immediately after the armistice, when the bulk of the wounded from overseas was returning, orders of the Surgeon-General provided that no soldier injured in line of duty should be discharged until he had received all the benefits which the army could give him. The soldiers, knowing this, and with a burning desire for discharge within them, made every effort to restore function and secure release. Such conditions cannot be stimulated in the industrially injured, but the illustration indicates what psychological value incentive to get well has. The football player injured at the beginning of the season is striving with might and main to get into the game again. He will submit to any kind of painful treatment that promises restoration. To take the place of a natural incentive, or an artificial incentive as that in the case of the soldier cited above, there is now the system of occupational therapy, physical therapy and reeducation. This system was developed in this country in the army hospitals. While it has been known for many years and has been practiced for many years in other countries than ours, the war experience has first made it really known to the Profession of this country. I find that the value of this work has been impressed, to any marked degree, upon a comparatively few men of our profession; to many others it appears a casual and more or less theoretical thing; by many it appears to have been unnoticed, certainly unappreciated.

The Industrial Accident Commission is committed to the theory of this physical treatment and demands the application of physical treatment in cases where it may reasonably be expected to produce improvement. (There are three conditions which do not permit of this system having a fair trial. They are, (1) lack of equipment and personnel, (2) lack of proper expert guidance, (3) lack of discipline of the injured.)

For the first condition, the only answer is that those having the power and authority must understand the economic value of this line of treatment and must establish adequate departments fully manned. Of the second condition, I will say that the average surgeon capable of doing the necessary surgical work is not a proper guide to adequate physical therapy. He does not know the possibilities of physical therapy unless he has studied it. He can no more be an expert in that than he can in X-ray diagnosis. My plan would be to have a physical therapeutic specialist connected with each surgical group to whom each case would be sent and with whom each case should be seen in consultation by the operating surgeon. The specialist would learn the exact condition and would then outline physical therapy to be applied. He would watch the course of the case and make the necessary changes, reporting as necessary to the surgeon. The present method is, and I know it from my own experience, that the surgeon is likely to leave the whole question and management of physical therapy to a physical therapist who has no training except in his

own lines of manipulations. I dare say you will not find one surgeon who is conversant with the fundamentals of physical therapy, or even what function may be restored in a given case.

Now, we will discuss occupational therapy. This theoretically begins as soon as the patient is out from under his anaesthetic. It is desirable to keep his mind and his hands busy at occupations compatible with his strength. It keeps him from finding time to count the fly-specks on the ceiling and the metaphorical fly-specks on everything coming in contact with him. The more nearly complete is the consumption of the patient's time, the more the benefit.

In the Massachusetts General Hospital, a recent investigation, the character of which I may not divulge, has shown that the system embracing occupational therapy, physical therapy and work treatment has developed a pecuniary saving of approximately one-third, besides more quickly rehabilitating and more completely rehabilitating the injured. I might say in this connection, that the experience of the Massachusetts General Hospital was not confined to injury cases, but a saving in time and money was developed through the work treatment in ordinary medical and surgical cases. You are familiar with this subject, the bed-side work, the war work, the shop work. But it requires specially-trained aides to do this work. In all of this phase of treatment there is too much tendency to employ makeshifts. If you are going to establish a physical and occupational therapeutic unit, get expert advice. Get expert technicians and aides. Don't get those untrained to their duties and try to adapt them. The rightly-chosen woman can produce ten times as good results as some ready-made, strong-arm man.

There is a host of details I might go into and illustration I might take up. This must be omitted.

I would especially emphasize the subjects of:

Physical examination in selected cases.
Making use of the Industrial Accident Commission for information.
X-Ray examination in possible bone injury.
Function more important than appearance.
The restorative and adaptive power of nature.
Encouragement of frankness in dealing with the injured.
Suggestion, good and bad.
Humanity to expedite all work.
Physical therapy by experts selected for proper qualities.
Necessity for guidance in physical therapy.
Pecuniary saving through therapeutic measures.
The extraordinary effectiveness of physical therapy if properly applied.

BILATERAL NEPHROLITHIASIS. *

By GEORGE W. HARTMAN, M. D., and SAMUEL A. GOLDMAN, M. D., San Francisco.

Recent reports by various observers of the incidence of bilateral nephrolithiasis are very much in agreement. Braasch [1] reports sixty-two cases among five hundred and sixty-six operations for calculus, a percentage of 12.3. Israel, [2] in an exhaustive monograph on kidney and ureter stones, reports sixty-four cases among five hundred and seventy-two operations, or 11.2 per cent.

Our data includes forty-two cases of nephrolithiasis of all types. Of these, ten were bilateral, a percentage of 23.8. If reduced to the proportion operated it becomes 29.4 per cent. It is interesting to compare these figures with those quoted by Krotoszyner [3] in 1909, in which he reports three cases but gives no statistics of his own. He quotes Israel's [4] figures at that time as 27 per cent.; Watson's,[5] 30 per cent.; Kummell's,[6] 30 per cent.; Kapsamer's,[7] 18 per cent. at operation and 30 per cent. at autopsy. It seems strange that with the more crude methods of diagnosis at that time, that the incidence should be greater; one would be inclined to accept the autopsy figures as accurate, against which the argument is made justly that, with our improved methods of diagnosis and treatment, fewer cases of bilateral nephrolithiasis come to autopsy now than at that time. Thirty-two of our patients were males, ten females; the youngest was twenty-two, the oldest eighty-two, the average age forty-three years. Duration of symptoms ranged from two days to thirty-five years. The location of stones was on the right side in fourteen, on the left side in sixteen, bilateral in ten, one of which was a horseshoe kidney. In two cases the stones were found in the bladder, whither they had descended.

Symptomatically, bilateral nephrolithiasis does not differ in any essential detail from unilateral; in fact, in none of the cases reported was the double involvement suspected at the start, and it was usually a matter of surprise to learn that we were dealing with involvement of both kidneys.

DIAGNOSIS

A carefully prepared history is the first step to diagnosis, and though it is not sufficient in itself to draw conclusions, it establishes clues upon which one formulates theories. Ochsner [8] goes so far as to say: "The most important element in the diagnosis is a carefully-written history taken by the surgeon himself."

In reviewing these cases occurring over a period of years, we were struck by the different conceptions of internes and others as to what constitutes a "history." Some, taken by good men, while adequate for the case in question, were almost valueless for the purpose of statistics. In genito-urinary work, which can be standardized within certain limits, we find it desirable to use a chart form in which certain recurrent symptoms are so arranged that tabulating is rendered easy. For instance, our chart provides spaces covering "Frequency of urination; day—night: Pain; when—before—during—after: Blood; bright—mixed" and so forth. It has been contended that filling out blanks is a lazy man's way of taking a history, but when one is compiling the data for study, it is certainly easier than to wade through pages of wretched writing to get at essentials.

SYMPTOMS

The symptoms of renal calculus are striking to one used to interpreting them, and though the novice will frequently attribute those of other origin to the kidneys, true renal calculi set up a

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syndrome of their own which seldom leads to error. Mistakes in diagnosis will happen, however. In our series, four patients had previously been operated for "appendicitis" and two for "salpingitis." One had had three laparotomies successively for "appendicitis," "salpingitis" and "adhesions" by two very capable surgeons. This, however, is not always the fault of the surgeon. Braasch [1] reports an instance in which the patient complained of gastric symptoms only, and was operated for acute duodenal ulcer. It is essential in formulating a diagnosis to take into consideration all of the refinements of detail and technic at present available, and to verify all data to the point of exclusion. Only by so doing can one approach the final conclusion with the full moral preparation to proceed.

In this series the patient's presenting complaint was sometimes illuminating: twenty-seven complained of pain; five of haematuria; six of difficult and frequent urination; two of "kidney trouble"; one of rheumatism, and one of "stone in the kidney." Studying the pain further, it was found on the affected side in twenty-one instances; in the back in five; in the penis, bladder and opposite side each in one. Radiation of pain was noted in over one-third of the cases. It was mentioned as radiating to the thigh and groin, testicle, bladder, forward, and once to the opposite side. Twenty had one or more attacks of true renal colic. Urinary frequency was increased in twenty-six cases, 61 per cent.; during the day, in six cases; at night, in two, and both day nad night in eighteen. While blood was found microscopically at some time in practically all the cases, it was visible to the patient in only twelve instances. Physical examination rarely adds positive findings, but is of value in excluding other conditions. Occasionally a kidney was palpable, but not more frequently than the average. Unless the kidney be markedly enlarged, it is not apt to be felt and a patient who has just gone through an attack of renal colic is not very apt to relax his abdominal muscles sufficiently to enable one to feel much. In most cases where the kidney was palpable it was in women, and it was as frequently felt on the opposite side as on the affected one.

Cystoscopic findings differed; they were negative in the majority of cases, twenty-three, or 54 per cent.; 46 per cent. showed a variation from an appearance of edema of the ureteral orifice or a patulousness and congestion, to actual discharge of blood and pus. In one instance a stone was seen impacted in the ureteral orifice. One case showed a marked cystitis. Ulceration of the bladder mucosa was never seen, a point for differentiation from tuberculosis. In general, cystoscopic findings beyond a patulous ureteral meatus are not especially illuminating. Functional tests showed reduced activity on the affected side in all unilateral cases, sometimes to the point of complete absence of secretion. All of these showed a marked improvement after the removal of the stone.

The diagnostic feature par excellence, however, was the radiogram. We prefer to study our cases previous to making the X-ray. Having them diagnosed by others takes away the incentive to work and one is apt to lean too heavily upon the radiologist. Twenty-nine of the cases, or 69 per cent., were confirmed by the X-ray. In four which were not found by X-ray the subsequent passage of stones confirmed the diagnosis; two additional cases were confirmed by operation.

Proper preparation is essential for good radiograms. Every radiographer has his own methods, which range from nothing at all to very elaborate cleansings of the alimentary tract. We get very good results by giving half an ounce of castor oil on the morning and evening of the day before, clear fluids with no milk that day, and no breakfast on the day the plate is made. No enemas are given as they tend to form gas. It is quite possible to get good pictures without any preparation in individuals not too stout, but it is a great disappointment when the plates are developed to find the bowel full of fecal matter or gas; hence we prefer a standard preparation. Regardless of the location of symptoms, no X-ray is adequate which does not include the entire urinary tract. This was especially borne out in the experience with the bilateral involvements. Neither is any X-ray good which does not show the usual structures, bony and soft, especially the psoas muscles.

Pyelograms do not aid much in diagnosis, but are of value in determining the amount of renal destruction and the type of operation advisable. It is a rule not to iniect a kidney if there be an obstruction beyond which a catheter cannot pass. The solution is apt to be retained, causing much pain and possible renal destruction. After making a pyelogram, if any large amount of fluid has been used, it is customary to wash it out with sterile water or normal salt solution. Many of the unfavorable reactions due to pyelography, some of which are mentioned by Kretschmer,[2] have been overcome by the use of the alkaline halogen solutions and the gravity method and there is no objection to this manoeuvre, when indicated. Wax-tipped catheters are of more value in stone in the ureter than in the kidney, but one must be careful that the scratch does not come from the instrument itself.

Twelve patients passed stones either spontaneously or by manipulation; seventeen were operated; of these seven had pyelotomies; one, ureterotomy; nine, nephrectomies. The last because there had been so much renal destruction that it was impossible to save the kidney.

SUBSEQUENT HISTORY

One patient died of anuria following bilateral pyelotomy in a horse-shoe kidney, an operative mortality of 2.3 per cent.; two died of intercurrent disease; three were improved; twelve were cured; one, not operated, who passed two stones spontaneously, subsequently developed a bilateral pyelitis; and one (No. 5 below) returned with stones in the opposite kidney and ureter. Twelve reported no return of symptoms; twenty-two could not be traced; one who returned complaining of pain in the remaining kidney showed a compensatory hypertrophy, but no sign of stone.

In the ten bilateral cases, including one horse-shoe kidney, all were males. The age ranged from twenty-two to fifty-six, the average being thirty-five years. All complained of pain in the back, three also having pain in the left side. In two

instances it radiated to the bladder; colic was present in four. Increased urinary frequency was present in all cases. Blood was present macroscopically in two. In all patients the diagnosis was confirmed by X-ray. Five were operated; there was one nephrectomy and four pyelotomies.

Choice of operation in bilateral lithiasis must be based upon the general status of the case; while in general the advice is valid to operate upon the better side first, it is not always feasible. Case No. 1 had bilateral stones and pyuria and a chronic cowperitis. As his symptoms were all referred to the left side, this was operated, though the poorer of the two. Subsequent examination of segregated urines showed the operated side free from pus. The opposite side is still to be operated. Case No. 2 showed a silent stone at the lower pole of the right kidney and a very large one in the left pelvis; also a markedly enlarged kidney and pelvis on this side. Cystoscopy was almost impossible on account of the gushes of pure pus from the left ureter. The diagnosis was bilateral nephrolithiasis with left pyonephrosis. The patient was urinating hourly day and night, his symptoms had been present for twenty-five years, and he was a nervous and physical wreck. Had the better side been operated, the opposite kidney would not have been adequate for carrying on the renal function. Upon exposure, the left kidney was found to be a huge pus sac filled with stones and it was removed. The patient is in splendid condition and will go on indefinitely with his one silent stone. He has a few blood cells and a good amount of albumen in his urine. Should it become necessary to operate upon his one remaining kidney he is a better risk now than before his first operation. It is interesting to note that two of his sisters in a family of nine have a history of calculi.

Case No. 4 is quite a fat man who has large stone shadows on both sides. He has a marked pyuria with moderate frequency. Judging from the pictures, there is a large amount of renal destruction on both sides and one would hesitate to interfere. He is fairly comfortable and reports occasionally for X-rays. The stones are increasing in size slowly.

Case No. 5 is interesting in that the patient came in originally in 1915, when a diagnosis of left renal calculus was made. He refused operation and was lost sight of until last week, when he came in again, this time complaining of pain on the left side, radiating to the right. Cystoscopy found the right catheter impeded about six centimeters above the uretero-vesical junction. The X-ray showed three shadows like a rosary at that point. There is also a shadow the size of a hazel nut in the pelvis of the same side. A large shadow completely fills the pelvis and calyces on the left side. There is an anuria on the right side and a pyuria on the left; attempts to dislodge the stones in the ureter show some success. If there is a real anuria present on the right side it will be essential to work quickly. An interesting complication is a skin disease which has accompanied his four attacks of typical colic. This varies from a simple peeling of his hands to a desquamation of almost his entire body.

Case No. 6 has a left nephrotomy in 1905, and though X-rays in 1915 showed large calculi in the right side and ureteral catheterization showed no urine on the left, the patient was quite comfortable at his last appearance.

The remaining cases present nothing of especial interest. Hollander [10] accounts for the formation of bilateral calculi by a paralysis of the renal pelvis and ureter following injuries of the spinal cord. Careful study of our bilateral cases failed to elicit any history of trauma.

SUMMARY

1. Bilateral nephrolithiasis does not differ essentially in history and symptomatology from unilateral.
2. The taking of a careful history is the first essential to the proper study of the case.
3. The symptoms of renal calculus are frequently misinterpreted, hence the necessity of correlating all findings.
4. Pain is a constant symptom, varying from a dull ache to colic; radiation of pain is the most suggestive.
5. Frequency of urination was the most common symptom.
6. Physical examination is of most value in excluding other conditions.
7. Cystoscopic findings are not striking.
8. Function is usually depressed on the affected side.
9. The X-ray gives the best evidence, but is not infallible.
10. It is important to have proper preparation for X-rays and to take the entire urinary tract.
11. There is no objection to a pyelogram if the shadow casting fluid can be drained off.
12. In bilateral involvement, the better side is usually operated first, unless distressing symptoms are coming from the poorer side.
13. Patients with large calculi on both sides may do well if left alone.
14. The fact that some individuals are calculus formers suggests caution in operating and a guarded prognosis.

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URINARY INCONTINENCE AND ITS OPERATIVE REPAIR.*

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Incontinence of urine results from inability of the sphincters to prevent the involuntary escape of urine from the bladder. There are a number of persons having varying degrees of urinary incontinence due to spinal cord diseases, tuberculosis and traumatic lesions, who are forced to

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wear a urinal on their person. The cystitis which usually accompanies these conditions with its complications and sequellae and the stench emanating from the urinal, impresses one with the miserable condition of these patients and the readiness with which they will submit to any procedure which offers some small hope of relief.

True incontinence has been classified by Guyon as follows:

A. Without material lesions of the urinary tract.
   1. Incontinence from nerve lesions.
   2. Incontinence from nervous affections.
   3. Incontinence of children.

B. With material lesions of the urinary tract.
   1. Without retention of urine.
      a. Mechanical incontinence.
      b. Incontinence of tuberculosis.
      c. Traumatic incontinence.
      d. Incontinence from urethral insufficiency.
   2. With retention of urine.
      a. Incontinence of stricture.
      b. Incontinence of enlarged prostate.

The four cases forming the subject of this report, according to their histories, were originally in the last group, but as a result of operative accidents in the attempted relief of their retention, they came under my care suffering from traumatic incontinence without retention of urine.

There are many reports on the treatment of incontinence with drugs, massage, electricity, dilatations, and periurethral injections of paraffin and vaseline. Also epidural and spinal injections have been used. But all have more or less failed in the presence of organic disease.

The first operative procedure was reported by Gersuny in 1888, consisting in dissecting free the length of the urethra in the female and twisting it from a half to three quarters of a turn and suturing it in this position. Subsequent articles reported, in general, unsatisfactory results, because of sloughing of the urethra. In 1907, Young reported an original and successful operation on the male in which he sutured both internal and external sphincters which had been cut fifteen months previously during an external urethrotomy. In the discussion of Young's paper Kelly reported two cases in which he had successfully performed similar operations on the sphincter at the neck of the bladder through the vagina in the female.

In 1908, Eckstein reported a case of Tabes and hypertrophied prostate with retention and dribbling in which he did a suprapubic cystotomy establishing a fistula in which a retaining catheter was worn, controlled by a clamp and carried in the pocket of a belt. Similar operations have been done on both the male and female by closing the urethra by a plastic operation, or a flap and valve operation through the perineum or vagina and establishing suprapubic drainage. These patients washed their own bladders once or twice a day and visited their physician every two weeks to have the retaining catheter changed and cleaned. In 1911, Squier reported a case in which he did a successful "urethroplastic operation," dissecting out a large sac from the posterior urethra forming a new urethral floor, and closing the muscles over it. Kelly in 1914, and Young in 1919, reported further successes of their operations.

There is conflicting testimony as to the comparative value of the two sphincters in the control of micturition. Young states that after perineal prostatectomy, before the wound heals and while urine comes out of the urethra back of the external sphincter, the patient is able to control his urine, showing the internal sphincter is sufficient to prevent incontinence. He also quotes Freyer's autopsy reports on cases of previous suprapubic prostatectomies in which micturition has been normal, but in which the internal sphincter was greatly dilated, showing that it was not entirely necessary to prevent incontinence.

A careful cystoscopic and endoscopic study was made of the cases reported in this article to determine their exact condition, and the site of the injury was seen in all except the case of tuberculosis. At operation it was found that the space between the ruptured ends of the muscles was filled with scar tissue sufficient to allow the sphincters to stand open. In the tabetic and tubercular cases where there was complete incontinence, the bladder wall and also the perineal muscles were found markedly atrophied, of a very soft and friable nature and very difficult at times to suture. In the other two cases where there was slight control, the muscles were in a much healthier and more normal state and gave successful and gratifying results.

Case 1. C. B., No. 42485, German, Age 59. Entered San Francisco Hospital October 6, 1919. Complaint, incontinence of urine. Family history negative. Past history negative except for left nephrotomy in 1893, for removal of kidney stone. Present illness, in May 1918, a perineal prostatectomy was done resulting in a perineal fistula persisting until three months ago. Also if he held his urine over fifteen to thirty minutes he began to dribble.

Examination: Fairly well developed and nourished. Argyle Robertson pupils. Healed left nephrotomy scar. Reflexes present and active. Genitalia normal. Healed perineal scar from prostatectomy wound. Cystoscopic and urethroscopic examination: Entered easily, no residual, bladder capacity twenty-one ounces. The internal sphincter was somewhat relaxed due to a shallow cleft on the right side of a small median bar, apparently the torn internal sphincter. There was a depression just inside the membranous urethra, apparently the urethral orifice of the recent perineal fistula, posterior to which was an overhanging process. The membranous urethra was very much relaxed. Tissues soft.

Operation October 14, 1919, under two grains of tropocaine spinal anesthesia. Inverted V incision made and the scar tissue of the previous prostatectomy dissected out down to the urethra which held a sound. The dissection was carried until the ends of healthy perineal and urethral muscles were found, without opening the urethra. The urethral muscles were brought together and

then the perineal muscles sutured about the urethra, thus making a tight sphincter. The wound was closed without drainage. The internal sphincter was not touched in this case. Recovery uneventful. One month later he was seen and a 24 Fr. sound easily passed. He stated that he was holding his urine two or three hours, and had full control.

Case 2. A. G., No. 42110. German, Age 79. Tinsmith. Complaint: Complete urinary incontinence. Family and past histories negative. Present illness: Started two years previously with frequency of urination, and at times hesitancy and dribbling. Suprapubic prostatectomy done six months previously in Los Angeles, and has had complete incontinence since.

Examination: Argyle Robertson pupils. Lungs, impaired resonance in both. Achilles tendon reflexes absent. Left patellar diminished. Spinal fluid under tension, cell count 36, Wassermann XXX. Blood Wassermann XXX. Genitalia: Erosion of glans penis and prepuce from maceration in urine. No evidence of prostate by rectal palpation. Left vesicle palpable. No residual urine on catheterization. Bladder capacity, less than 100 cc. caused great distress.

Cystoscopic and urethoscopic examinations: Entered easily, marked cystitis with ragged flakes of pus covering the entire bladder wall. The internal sphincter was torn and separated in the base of the urethral orifice. The prostatic urethra was very irregular in outline and scarred. The external sphincter was greatly relaxed, standing open.

This patient was treated for over a month with bladder irrigations, tonics, and antiluetic measures, without improvement. He continually begged for something to be done to relieve his misery, and after several urethroscopic examinations, decided to attempt to repair the internal sphincter and tighten the external sphincter.

Operation, October 25, 1919. Suprapubic cystotomy done and internal orifice exposed. The floor of the urethral orifice was denuded of mucous membrane and the torn ends of the internal sphincter approximated and sutured with fine chromic gut. One half inch drainage tube sutured in. Inverted Y incision made in perineum exposing the bulbo-membranous urethra, and the external sphincter tightened by removing a portion and suturing together the ends. Perineal muscles closed over the urethra and the wound closed without drainage. Suction apparatus attached to suprapubic drain to keep bladder dry.

The bladder was very thin walled and friable, as were the tissues and muscles in the perineum. Forceps and hemostats would tear out on the least strain. The man had no resistance and there was no effort at healing, and he died one month after the operation.

In this case it would have been a better procedure to have followed Eckstein's method with a simple cystotomy and retaining catheter in the fistual, and gotten him up and around in a few days, and later obstructed the urethra by a plastic operation, through the perineum.

Case 3. F. G., No. 42437, Italian, Age 54. Entered October 6, 1919. Complaint: Incontinence of urine. Family history negative. Past history: Radical operation for carcinoma of the lip seven years previously. Present illness: Frequency, burning and pain in head of penis started two years ago. Frequency increased to every fifteen to thirty minutes. In January, 1919, he developed retention and a perineal prostatectomy was done in Stockton, resulting in complete incontinence through the penis when lying down and through a persisting perineal fistula when standing up. His testicles swelled up one month after the operation and have never gone down.

Examination: Marked pyorrhea. Rales and dullness in the apex of the right lung. Sputum negative at this time. Genitalia: Redundant prepuce irritated from dribbling urine; both epididymi enlarged, nodular and hard; right testis small and hard. Two fistulas in perineal wound. Left side of prostate apparently removed. Small mass in region of right lobe, hard, nodular, and infiltrated into the right vesicle.

Cystoscopic and urethroscopic examinations: Entered easily, practically no badder capacity, mucous membranes somewhat inflamed, particularly around the left ureteral orifice. Posterior urethra rigid and board like, both sphincters standing open showing no contractility. Phthalein test: 30% from the right kidney, and 13½% from the left in half an hour. Acid fast bacilli in the bladder urine.

October 29, 1919, left nephrectomy done, kidney badly abscessed and destroyed.

November 4, 1919, bilateral epididymovasectomy done (Cabot's method) under spinal anesthesia. Pathological report, tuberculous.

November 11, 1919, under spinal anesthesia, inverted V incision made in perineum and fistulas dissected out down to the membranous and prostatic urethra. The sinuses were filled with soft granulation tissue making up more than half of the perineal body. Such a large cavity was present after the dissection, that no attempt was made to find healthy muscle through the thick scar which covered them; the urethral sinus was closed over a sound and the scar infiltrated perineal muscles sutured together with difficulty. A small drainage tube was left down to the urethra. Pathological report showed round celled infiltration and small tubercular abscesses. Suprapubic cystotomy done for drainage.

December 16, 1919, urine draining from both suprapubic and perineal wounds. December 31, 1919, X-Ray treatments started. In twelve days the suprapubic wound was practically closed and by the end of a month both wounds were closed. Forty-seven daily treatments given, omitting Sundays only, without burning. Notes made on February 19, and 23, 1920, state that the patient was up and about, and holding urine for a few minutes at a time.

Shortly after, his perineal wound broke open again, and as acid fast bacilli had been found in his sputum, he was transferred to the T. B. ward. Except for a greatly improved physical

condition, he has the same miserable urinary incontinence he had in the beginning. Perhaps, if the X-Ray therapy had been started earlier, both before the perineal repair operation, and immediately after it, there might have been more primary healing and a permanently closed perineum obtained.

Case 4. J. G., No. 43540, American, Age 44. Entered December 12, 1919. Complaint: Dizzy spells and urinary incontinence. Family history negative. Past history: Insomnia and chronic arthritis in all joints off and on for years. Dizzy spells and headaches for last six years relieved by digitalis and whisky. Pain in heart and swelling of the feet at times. Two Neisser infections, and has been treated for strictures since 1908.

Present illness: Had an external urethrotomy done in 1910, for his strictures. Has had dribbling since then, especially when asleep and when tired after working. Has worn a urinal and been told by several doctors that it was the only relief for him.

Physical findings: Heart absolute irregularity, rapid, weak pulse, no murmurs. Genitalia: Chronic epididymitis both sides. Urine clear. Number 30 Fr. sound easily to bladder. Prostate small, lobes nodular, base infiltrated into vesicles especially right. Prostatic sulcus deep. Cystoscopic and urethroscopic examination: Capacity 32 ounces; bladder wall and ureteral orifices normal. Neck of bladder regular in outline anteriorly, with a deep cleft in the floor of the urethra between the lateral lobes of the prostate. The cleft extends forward through the prostatic and membranous urethras, showing both sphincters had been cut. The sphincters did not close in the normal folds but remained relaxed and were sluggish. Varumontanum not seen.

December 9, 1919, Operation under two grains of tropocaine in spinal fluid. Suprapubic cystotomy: Denuded an area in the bladder neck covering the ends of the cut internal sphincter, and dissected out the scar tissue. Approximated the ends of the muscle with four fine chromic catgut sutures. Sewed in one half inch rubber drainage tube in the suprapubic wound. Injected one and one-half grains more of tropocaine in the spinal fluid, one hour and a half after the first injection. Put the patient in the lithotomy position and made an inverted Y incision in the perineum. The scar tissue was dissected out until the healthy muscle ends were found, without opening the urethra. The ends of the urethral and perineal muscles were approximated and the wound closed without drainage. Negative pressure apparatus applied to the suprapubic bladder tube to keep internal sphincter dry as possible.

In one month the wounds were healed and the patient was urinating normally, getting up once during the night. At the end of six weeks a 29 Fr. sound was passed and a cystourethroscopic examination made showing a median bar across the former cleft in the vesical orifice, and with normally functionating internal and external sphincters on withdrawing the urethroscope.

January 19, 1920, dismissed with urinary condition cured.

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INDUSTRIAL MEDICINE.*

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For the first time in the history of this society a new section on Public Health and Industrial Medicine makes its debut on the program as an important branch in the field of scientific medicine. These specialties should be devoted in their fullest measure to educational problems in preventive, industrial and socialized medicine, so as to offer to the general profession a knowledge of subjects that are correlated with medicine. The practicing physician trained in curative medicine deals entirely with the individual while the sanitarian, the industrial physician, or the social worker deals with the problems that confront the whole of the society. All factors in public health or social economics are fundamentally medical subjects, and consequently the profession should be continually informed of the advances made in these fields of research. Bernardino Ramazzini of the University of Padua, whose death occurred two hundred years ago, and probably the earliest teacher in the study of the diseases of artificers, is reputed to have said: "Man must work to live, and if the work itself brings death a vicious circle is created." This observer realized that nothing comes closer to actual humanitarianism than prophylaxis of the ills caused by special occupations. When the steam engine was invented, modern machinery was the result, and manufacturing became the foundation of commerce and industry. All efforts and skill in chemical and mechanical science were brought to bear to increase output and convert raw materials into finished products. The human machine element was lost sight of in this evolution for the supremacy of trade until lay workers connected with social agencies, statisticians in life insurance companies, and medical men became aroused by the spectacle of the human wastes, who met their early demise, or filled our institutions and hospitals.

The studies of occupational diseases and hygiene by such Europeans as Rambousek, T. M. Legge and Sir Thomas Oliver combined with the pioneers in the field in America, viz: Kober, Alice Hamilton, Gilman Thompson, Hayhurst and others are epoch making. The research in fatigue by Josephine Goldmark and Professor Lee, the compilation of mortality statistics from consump-

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tion in the dusty trades by Frederick Hoffman, safety in industry by Tolman and the labors of the New York Ventilation Commission are only a few illustrations of the advances made along these lines of endeavor. The culmination of the wrongs and injustice done to workers, through carelessness and injury, was instrumental in the legislative measures that brought about the Workingman's Compensation Act. The passage of these laws was the measure which stimulated a demand for well-trained industrial surgeons, men of education, with vision and human interest.

Industrial medicine may appear to the skeptic in the profession to possess a character dangerous to its best interests. He may think that he sees in it the characteristic earmarks of contract practice, or socialized medicine. Such fears need not be entertained, as the fact is now definitely recognized among the great captains of industry that medicine plays an increasingly important part in the whole structure of their various organizations, thereby furnishing a great and parallel increase in all the various activities of medicine. What the profession must demand is that medicine shall not be exploited, and that is one of the chief purposes for which medical societies are grouped. It is illogical to presume that general medicine as it is daily practiced among the laity could be applied collectively to the army, for instance, without a definite knowledge of military training in the specialized fields, and the same is true of industrial medicine and public health.

The great corporations and railroads have realized that in the past they were short-sighted in providing cheap medical service. It was this class of medical men who earned the stigma of the company doctor, and did not command the respect of either the employers or employee, or of his colleagues in the profession. This type was the old time doctor who was primarily a first-aid man. The employer reluctantly learned that such service was the most expensive, as it is far more economical to prevent than to cure. So in the past five years the plant surgeon has risen to a place in the foremost rank of the profession, highly specialized, honorable, and rich in opportunities for human service.

Industrial medicine is not simply a field for the ordinary practice of general medicine or surgery, it is a development which has perfected a specialty in traumatic and occupational diseases, and the means for increased production, healthier and happier workers and decreased labor turnovers.

The scope of the general application of industrial medicine is to the larger group as a unit, and it is in this relation that the main endeavors are centered, although individual medicine is rendered whenever requested. Its specific purpose is prevention, the prevention of occupational diseases and accidents. When these two main issues are applied to the whole group, the humanizing of industry is attained, and a crowning victory for society accomplished. The long hours of labor, the speeding up of machines and other measures promoted by the employer to secure the maximum return from the labor of his employees, are unscientific and unwarranted. To secure the maximum of efficiency from the human machine, the industrial surgeon, virtually a human engineer, acts as the agent for stabilizing labor, thereby facilitating production and helping the worker to do a better day's work and to earn better compensation. These facts most employers now realize.

The trained industrial surgeon, by his methods and process of elimination, makes scientific studies of the hazards of occupation; is able to interpret industrial processes, and clearly understand the various operations of mechanical appliances, and to provide the necessary working environment. The worker in the modern factory should not be denied fresh air, sunshine and good water. These are his natural privileges and environments lacking these things are responsible for many occupational diseases, those resulting from the emanations from fumes, gases, toxic metals, dust, high temperature and humidity. Occupational hygienists recognize that physical breakdown is due to unsanitary working conditions, lack of medical supervision and lack in the recognition and prompt treatment of conditions which lead to invalidism. The employer now realizes that better relations between himself and the worker are possible by the provision of healthful places in which to work.

The most capable individual to estimate the human requirements for filling a job or the placing of the handicap where service can be of most value is the industrial physician, through the medium of physical examinations, whereby physical defects are revealed and detected.

It is estimated by Mock that in the United States there are forty million workers, and of this number about one-tenth are receiving scientific medical supervision. Of this vast industrial army he states that two million lose time yearly entailing a loss of over one day each, 750,000 of more than four weeks, 18,000 are permanently disabled, and 22,000 are killed outright. From an economic standpoint the loss is estimated at eighteen million working days or the working time of 60,000 men per year. Gier states that the non-effectives in the average industrial plants are known to be three per cent. for sickness, two per cent. absences falsely claimed to be sickness, one per cent. lost time due to accidents, or six per cent. in all. When the principles of industrial medicine intelligently applied can reduce these numbers to three per cent., or a gain of 30 workers in every 1000 on the job, the employer as well as the employee is markedly enriched thereby.

The United States Department of Labor investigation concerning accidents in the steel and iron industry found that fractures of all kinds alone constituted 2.6 per cent. of all injuries and that the average of days lost was 55. It is evident that some factor must have entered into the determination of this average, for the figures in no way correspond to those obtained by the American Surgical Association Fracture Committee, their average of time lost being 105 days for all long bones. The conclusion to be drawn is that in industry the rendering of immediate and proper surgical service by a surgeon specializing in traumatic injuries is that factor.

The introduction of plant dispensaries constitutes a medical agency where the "stitch in time" method is practiced; where infections and minor

ailments are nipped in the bud. With skilled trained nurses constantly in attendance, shock and hemorrhage is averted or controlled, the wounds are carefully sterilized and temporarily dressed while the surgeon is being notified. A workman soiled and sweating when injured, burned or sick, dispatched at once to the dispensary or plant hospital and given immediate attention, cleaned and put in a clean bed, has these advantages: his psychology is changed, fear eliminated and confidence established. Such agencies as first aid and transportation of the injured by trained employees in this art are important factors in preventive surgery. Work of rescue in smoke, gas and fumes, the application of artificial respiration by these first aid teams, have materially lessened morbidity and mortality, lessened suffering and shortened hospital days.

The plant surgeon coming directly in contact with the injured, keeps careful records important to the safety man, who after investigation applies the knowledge gained to the prevention of recurrence of similar accidents.

In co-operation with departments of employment where physical examinations are compulsory, the industrial surgeon plays an important role. The elimination of the unfit and the mental deficient, the recognition of infectious diseases, the placing of those with certain defects where they may still be efficient, and the discovery of degenerative diseases are benefits derived from such service. For industry is learning that labor turn-over is costly and is continually adding to the cost of the product.

Comprehensive study and conservative estimates by investigators show that it costs about $40 to hire and train a person for a job. By figuring that about 10 per cent. of the applicants are rejected, it is safe to conclude that the employer has saved $400 for every one hundred applicants. This estimate, however, would be cut in half if the overhead average of $2.50 per capita for medical examinations were charged.

Humane disqualification only must be resorted to, and the surgeon is in duty bound to give his professional reasons and advice to the rejected so that his defect may, if possible, be remedied. Some objections were raised by union labor as to physical examinations on the ground that industry was primarily the cause of these defects. Undoubtedly this is largely true, but alcohol, venereal and other infectious diseases are responsible for a great measure—a problem which industrial medicine must in the future solve.

In the close relation maintained with the welfare department in providing comfortable bathing and washing facilities, clean toilet and rest rooms, sanitary drinking fountains, and eating services, recreational activities, etc., the industrial surgeon acts as a practical hygienist, fostering increased comfort and happiness to the employees and receiving their good will and gratitude.

The introduction of the public health nurse has opened up a new specialty in this field. Her work is fully recognized as essential to industry. Follow up work in treatment of employees, prevention of malingering, teaching hygiene and visiting the homes, rendering first aid, and assisting the plant physician in physical examinations and keeping records, and giving advice to women in industry, doing social welfare work and making periodical sanitary inspections of the plant; this service constitutes preventive as well as economic medicine and tends to improve home conditions and decrease wage losses.

The study of occupational diseases while not new, offers to the industrial M. D. opportunities for research and investigations. Many of our states allow under the Workingmen's Compensation Commission, compensation for occupational diseases, California being one of these. Problems of great magnitude must be decided, such as, whether a worker had tuberculosis before entering a dusty trade, or a degenerative heart condition which was perhaps luetic, rather than resulting from industrial poisons. Our state board of health requires that certain occupational diseases are reportable, as for example: anthrax, compressed air diseases, toxic jaundice, etc. How many of our general practitioners are uncertain in their recognition of occupational diseases, and how often by ascertaining the patient's occupation, the clew to the diagnosis may be found. Plumbism was known to Hippocrates. Michael Angelo, Raphael and Corregio were victims of this disease, and yet we often see painters being operated upon for appendicitis, when colic is the main symptom, and the blue line on the gum is overlooked. Toxic jaundice, a symptom of acute yellow atrophy of the liver, a fatal disease due to the fumes of benzol, t. n. t. and tetra chlorethane, must not be a case for cholecystectomy but one to report for the prevention of other like cases. Chills, fever and sweats are the cardinal symptoms of brass founders' ague, due to zinc fumes; so neither the anophele nor the antidotes for malaria bear any relation as to the cause and cure of such analagous symptoms. Blindness was repeatedly met with in practice, but was methyl alcohol thought of as the causative agent? Dermatitis and exfoliation of the skin is common with dyers and workers in aniline. These are but a few illustrations of common occupational diseases confronted daily. The long list of toxic fumes, gases and dusts, the poisonous metals, such as lead, arsenic, mercury and chrome, the dusty trades, such as felt hat operators, grinders, polishers and cement workers, the diseases of harmful environments, such as caisson disease, trauma, neuroses, occupational cramps, anthrax and the incidents of tuberculosis, afford rich opportunities to the industrial surgeon to study and prevent hazards, thus bringing a keener appreciation of the great service which he can perform to society and of the valuable contributions he is able to make for the enrichment of medical science.

The doctor who merely accepts employment as a factory physician essentially to conduct a dispensary for the purpose of rendering emergency services in cases of accident, and often to protect the interests of the employer as to claims, cannot in the light of what has already been said be classed as an industrial surgeon in the truest sense. The study of industrial physiology in the worker

is a step in industrial research. Output and fatigue, rest, hours of labor, welfare work and food and their relations to efficiency, has been rationally developed by Lee in this promising science. It has two objects: first, the more purely scientific one of learning how the industrial worker actually performs his work, the conditions under which he can work most efficiently and produce the largest output, while maintaining his body in health and in the best condition; second, the more practical object of establishing in the factories the conditions which are conducive to the maximum output, and the maintenance of the maximum power of the worker. As a result of these earnest efforts, both employer and worker will soon recognize that industry must be organized on an intelligent basis, and not as heretofore on a basis of ignorant speculation. A great and virgin field for development still awaits the investigator.

The phenomenal advances made in industry in recent decades, chiefly through the achievements of mechanical and chemical engineering, has improved automatic machinery and developed new processes, but has not succeeded in eliminating the human worker. The human machine, therefore, the most intricate of all, has its limitations, due to fatigue, and must be understood, watched and not abused. Industrial medicine and sanitation has made scientific progress since the war, and individual investigators such as Florence, Lee, Gilbreth and Spaeth have shed much light on this subject of fatigue. As fatigue delays work, spoils material, diminishes output, causes accidents, sickness, and absences, naturally efficiency is diminished by it. How to minimize fatigue and maintain the efficient working power of the worker, constitutes one of the great industrial problems of the day.

The unique observations of Gilbreth with the use of the cinematograph for the study and curtailing unnecessary movements, thereby conserving much energy and overcoming fatigue, has resulted in increased output. The application of rest periods, at intervals, by Taylor had the effect of increasing production without detriment to the worker. Shorter hours in the British munition factories, where the working time was reduced from ten to eight hours, did not reduce the output. These examples afford practical illustration of the value of science applied industrially.

Industrial hygiene has made progress by leaps and bounds in the environment of the factory. The problems of ventilation, high temperature and humidity, are particularly interesting. Haldane (British), Lee, Hill, Winslow (American), whose books on these problems are epoch-making, have revolutionized the old theories of Petten-Koffer that CO_2 was the dangerous factor in ventilation. These investigators have proved by research that the ill effects of confined air are not due so much to the chemical impurities in the air, as to physical ones, such as increased temperature, humidity and stagnation of air about our bodies. It is these conditions which, when maintained, produce fatigue, lassitude, anemia, increased metabolism, loss of resistance and a predisposition to acute and chronic diseases in the worker. Tersely, as Lee has stated, ventilation is not a chemical but a physical and not a pulmonary but a cutaneous problem.

Industrial illumination is another factor in occupational hygiene, that the attention of architects has been called to, in the construction of modern factories. Inadequate natural or artificial illumination has its consequent effects not only on the cleanliness and cheerfulness of the workshop, but it decreases production and increases spoilage. There occur 25 per cent. more accidents in dark shops, and in night work. Poor lighting causes eye strain and impaired health in the employee.

Such public health matters as epidemiology, safe water supplies, waste disposal, insect control, all play an important role in safeguarding the worker in industry.

As sanitation is linked to preventive medicine, so is safety to preventive surgery. Accident prevention was the outcome of our State Compensation Acts. The slogan, "Safety First," was born as a result. Van Schaack of the Aetna Life, quotes that "on a basis of 300 working days of eight hours each, the startling and shocking record is that a workman is killed every four minutes, and one injured every four seconds." Viewing this situation from a humanitarian standpoint, we see clearly that the prevention of preventable accidents is not an altruistic accomplishment. To eliminate pain, as far as possible, to heighten the enjoyment of life, and reduce sorrow and misery, is a duty which admits of no arguments. From an economic viewpoint, picture the disaster of the victim of a fatal or serious accident; if a fatal one, his loss of wages, hospital and funeral expenses, the struggles and hardships of dependents, or if blinded or totally disabled, the inevitable burden to the family and community. The employer is liable for damages and the consumer experiences a rise in prices. There is greatly diminished efficiency after an accident, as the shock to the other workers curtails their productivity and at times even causes complete stoppage of work. The incidents of time consumed, material spoiled, and the training of a new employee, are matters that appeal economically to all employers where hard dollars are distinctly measured, to say nothing of the experience of having killed or maimed a human being.

The industrial surgeon must do more than relieve pain medically and surgically. Prevention of accidents is worth a pound of cure, and he must organize, wherever his field of duty lies, safety first campaigns. His understanding of how the accident occurred prompts him to ascertain the actual risk each employee is liable to and enables him to eliminate and reduce all risks by providing safeguards to all dangerous machines and places. His knowledge derived from the physical examination records made when the person was employed, gives him the opportunity to select the careful and intelligent workman for hazardous positions and the unfit or maimed for places where danger is nil. The promotion of first aid training, the promulgation of rules for safety, and their discipline and education in caution, incidentally falls to his lot.

In these days when the conservation of man power is necessary, not only from the humanitarian

but the economic point of view, safety, in the prevention of injuries and unnecessary deaths, pays. In 1914 the estimate in accident mortality in the United States was 2.8 per 1000 workers, while in Germany before the war it was .68 per 1000. The U. S. Steel Corporation reduced its accidents 42.6, while the Pennsylvania Railroad shops' reduction was 63 per cent. by the institution of careful safety measures rigidly enforced. Our industrial losses by accident is one of our greatest social evils, and national wastes, and undoubtedly constitutes the second highest cause of poverty and dependency. No one can compute the actual economic losses, the estimate being, roughly, 600 millions of dollars.

Industrial medicine, through the leadership of its personnel, recognized the opportunity during the war, for the rehabilitation of disabled and crippled soldiers. They were familiar with the enormous wastage of man power in industry, due to disability, and realized the wrong that was done by managers in scrapping their employees for whom they were morally responsible. The principle of salving crippled soldiers, applied to the industrial army as well, and as now organized, must continue always. To fulfill our obligations the human scrap heap must be salvaged and human life and energy conserved by physical reconstruction and vocational re-training methods.

In spite of our labors these will be still in our midst: the armless, the legless, the tubercular, the epileptic, and blind, many of whom can be furnished with gainful occupations and so become efficient members of society. Through this fertile field of social endeavor a new profession of physio and occupational therapy has been created. These, mostly women, trained in the arts of massage, physical education, hydro and electro therapy, and occupational methods and psychology, are not only preventing disability from ankylosis of joints, injuries to muscles, etc., but are instrumental in the solution of reclaiming and re-educating the maimed from accident and disease, so that they may be put back on the payroll and preserve their economic independence.

Much is to be expected in the next few years from well-trained men in the new specialty of industrial medicine. The research in occupational and degenerative diseases of the worker is just beginning. The hazards of war industrial plants were studied scientifically and so were revealed the effects of the poisonous dusts and vapors such as Trinitrotuol and the aeroplane dope mixtures. Every new appliance and discovery may have its particular hazards, as for example, the effect of the air hammer on the hands of the stone-cutter, which has been a recent contribution.

In New England forty-five manufacturers consented to contribute $1000 yearly for five years to Harvard Medical School to establish a chair of industrial medicine and surgery. Several of our medical schools have already added teachers and special clinics for this new field, special emphasis being given to traumatic and orthopedic surgery, industrial hygiene and the public health and social welfare work. The graduates to spend one year of internship in industrial hospitals associated with large plants. This shows the great importance that is laid on the subject not only by our medical schools but by the great number of employers who have organized medical departments in their plants. The employer does not have to look on the credit side of the ledger to see whether industrial medicine pays. He knows that medicine scientifically applied has increased efficiency and output, that compensation and loss of time is decreased, and the good will between employer and employee is preserved and strengthened. The employee likewise reaps the benefit in securing healthier working conditions, better care when sick or injured, protection from contagious and occupational diseases, overcoming of loss of wages, and of suffering and thereby increasing his comfort and happiness.

What satisfaction and contentment awaits the specialist who follows such a vocation as this. In the hand of the well-trained industrial surgeon lies the humanizing of industry, which in turn offers to labor and capital social reconstruction and democracy.

THE INDUSTRIAL SURGEON, WHAT HE IS—WHAT HE CAN BE—WHAT HE SHOULD BE.*

By GILBERT M. BARRETT, M. D., F. A. C. S.,
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Many problems are before the medical world and the most of these are pressing for recognition and solution before the Industrial portion of the world.

The Industrial Surgeon of today believes in and advocates examination of all applicants for work. It should be the accepted routine of all industrial enterprises. One of the greatest sources of saving to the employer is the physical selection of employees for work. This is done by the physical examination of all applicants for work before employment. The value to the employer depends upon the thoroughness of these examinations and the amount of co-operation between the employment department, the medical department and the foreman. The placing of all comers on jobs without any effort at a physical selection for their work is responsible for a great financial waste which cannot be shown in dollars and cents, but which, nevertheless, is very evident. Some of the sources of waste from the employment of the physically unfit are given by Mock as:

(a) The unfit who later must be discharged because of inability to do the work.

(b) The unfit who may continue to work for a few months or a year, but with a gradual decrease in their efficiency, due to advancing disease. Sooner or later they are forced to stop work, and during the entire period of employment they have been a source of loss to the company employing them.

(c) Those who, because of their physical condition, are subject to frequent accidents.

(d) Those who suffer accidents which ordinarily would not be serious, but, because of co-

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incidental physical conditions, cause prolonged disability or even death.

(e) Those having some contagious disease when employed, who communicate it to others in the working force. The acute contagious diseases are more common, but tuberculosis and syphilis also cause a great loss.

(f) Employment of the mentally deficient, the moral degenerate, and other types of mentally handicapped men who make up a certain percentage of the floating labor. An observing industrial physician will pick out this type during the course of his examination.

This suggestion of physical examination has the endorsement of the Industrial Surgeon; of the management of most industries, of Samuel Gompers as chairman of the Committee on Labor of the Council of National Defense, and of all save the few who can see in such an arrangement nothing of good for the employee. As has been explained by all Industrial surgeons, whose experience gives them authority to speak wisely, and as outlined in Col. Mock's work, and as declared by Dr. Loyal A. Shoudy, Chief Surgeon of the Bethlehem Steel Company, such examination is not designed nor intended to eliminate from labor's ranks every defective, and accept for employment only the perfect, the young, the strong and robust. It is the settled policy of all these Industrial Surgeons that it is not *rejection* of the worker but the *fitting of him* to his job. It also enables the Medical Department of any industry to keep in touch with the health and health problems of the employees. It permits its supervision of the Plant individually, and in group, so that prevention may be given an opportunity to prevent, and so that the communicable diseases may be early discovered, and the chronically diseased may be fitted to some job where he may still be productive and yet not sped to invalidism or dissolution.

Physical examination is really a necessary requirement. Not only this as a prerequisite for employment, but there should be a re-examination periodically; so that the Plant organization from the General Manager down through the entire force may be kept in good health.

This re-examination would be a practical demonstration of a health survey. Increasing blood pressure; decreasing weight; beginning eye trouble, nervous trouble, all these may be discovered, the cause ascertained, and if possible, the remedy applied,—medication, surgery, a brief vacation, more rest, change of employment, whatever is indicated. The period for this may be any time from six to twelve months.

Mock collected statistics from ten large industries, having very excellent medical staffs, which examine all applicants for work. The following table shows the results of these examinations:

1. Total number of applicants examined in one year..... 118,900
2. Total number employed having disabilities that did not interfere with selected work..... 41,158
   or 34.7 per cent.
3. Total number rejected for work because of disabilities..... 11,433
   or 9.7 per cent.
4. Total number having no disabilities of any moment..... 66,309
   or 55.6 per cent.
5. Total number of regular employees in these ten industries 102,400

It is fair to assume that these 11,433 applicants who were rejected for work would have soon lost their positions because of inefficiency, or would have left because of sickness. Certainly by the end of a year practically all of these would have been eliminated from the working force. It is impossible to estimate accurately what the loss to these companies would have been during that year from having these men and women in their employ. It would have been considerable, however, from decreasing efficiency due to disease, from an increased accident rate, from loss of time due to sickness and the resulting sick benefits in many cases.

Several estimates have been made of the cost of labor turnover. These estimates vary from $10 to $200. One authority, after a careful study of this problem in many industries, gives as a low average the amount of $35 as representing the cost of hiring and training an individual. Therefore, the 11,433 rejected cases in the above table can be estimated as saving the companies rejecting them, $400,155 in labor turnover.

Magnus Alexander in a comprehensive study of the cost of health supervision in ninety-nine different industries found that the average cost per employee for all medical work was $2.50. Using this figure as a fair average, and taking the regular number of employees as 102,400, we can estimate the cost of the entire medical work in these ten industries at $256,000. Thus the examination of applicants alone undoubtedly saved these companies over $140,000 during the course of one year.

1. Saving to ten concerns from rejection of physically unfit.....$400,155
2. Cost of entire medical work in these concerns 256,000
3. Profit to the concerns from this one branch of medical work alone 144,155

It is fair and conservative to estimate that at least 10 per cent. of those applicants with physical disabilities who were employed would have left very shortly if they had not been placed on jobs suitable for their physical condition, thus adding to their efficiency, contentment and health protection. This adds another $144,000 to the profit of the employers from this system.

Col. Mock in his recent book divides the services of the so-called Human Maintenance Department into Medical, Surgical, Dental, Nursing, Safety and Sanitation. He insists that there should be adjuncts to the Health Supervision out-

lined under the foregoing main heads. In these he includes Employment, Restaurant, Recreation, Welfare, Insurance and others.

Anent the dental conditions confronting all industrial plants Floyd W. Parsons in the Saturday Evening Post of March 20, 1920, said: "The United States is a nation of dental cripples. This is due to the practice of reparative rather than preventive dentistry." This is in consonance with Col. Mock's estimate that one-fourth of some 16,000 draftees placed in "limited service class" were so placed because of dental defects, diseased teeth or an insufficient number of teeth.

These figures clearly demonstrate that nationally we are allowing a calamitous state to ensue in the mouths of the children by neglecting the care of their teeth when it should be given. Having sound teeth in the mouth of an adult depends on the character of the foundation that is laid in youth. If the teeth of the child are neglected, there is no hope for the grown-up in the years to come.

According to Col. Mock, Dr. Irving Clark found 92% of applicants for work showed some diseased condition as pyorrhea, decayed teeth, abscesses, etc.

These conditions are a menace not only of the present but for the future in the form of infections, pulmonary and arthritic and heart disease, so-called, from the organisms found in the mouth unused to brush and powder and antiseptic wash.

The hazards to health are not confined to the industrial world whether the plant be large or small.

Certain industrial health hazards have been grouped as follows by Lauffer:

1. Poisons, dust, fumes, gases.
2. Heat, humidity, ventilation.
3. Lighting.
4. Crowding.
5. Fire peril.
6. Association with diseased employees.

The hazards do not all lie with or fall on the employee. The employer has certain definite industrial health hazards grouped by the same writer.

1. Decreased production; machines lie idle; sick employees are irregular, discouraged, lack "pep."

2. Excessive turnover, due to ill health, unfitness for job assigned, prevalence of epidemic and infectious diseases.

3. Increased accident compensation expenditure, due to sickness masquerading as injuries.

Cases arise daily where conditions are pathological, but trauma is alleged, or in which a minor trauma has provoked a long period of disability or an unusual degree of permanent impairment follows injuries, not in consequence of the injury alone but a disease condition present in the employee at the time. At the present time in many States the Industrial Accident Commission holds the employer strictly liable, as he takes the employee as he is.

The government employs only healthy men for the fighting line, men whose ability to recover from wounds is 100% plus. The industries necessarily employ many aged and feeble men suffering from latent diseases and infirmities, having enfeebled powers of resistance and necessarily delayed recoveries when injured. The industries are consequently entitled, no less than the men—to sympathetic consideration in the vast economic problem evoked by injury plus sickness.

It is advocated that there should be legalized releases for defects that cause abnormally long periods of accident disability—hernia, varicose veins, tuberculous foci in joints or lungs, valvular heart lesions, eye defects, amputations. All these and others should be noted in the examination charts and an employer not held liable for defects and diseases arising from causes unrelated to the employment, nor for aggravations of the same. This is along the lines of the laws of Connecticut.

Post mortems should be obligatory when the cause of death is in dispute, and the post mortem report should terminate the controversy.

Federal health charts are recommended by some, valid anywhere and everywhere in the country. Proper placement in industry requires the truth about physical defects.

It must be remembered that hazards are not confined to industry, but are found outside totally apart from industrial service. Among them are tendencies inherited or acquired, domestic troubles, financial worries, too little rest, exposure to infectious diseases, neglected teeth, tonsils, venereal diseases, various physical defects as hernia, flat feet, astigmatism.

An employee spends 8 or 9 hours in the industrial service daily, for 5½ or 6 days per week; and the rest of the 24 hours, at home, in community, or social association he incurs health hazards.

In the industrial plants of today with their modern heating, lighting, ventilating and sanitary equipment, he is probably in more healthful surroundings than in his home, his club, his movie haunt or his occasionally-attended church, especially with reference to communicable diseases.

It is admitted that there are industrial health hazards; it should be as well known and as widely circulated that the *purely industrial diseases* are rare in any general industry; that preventable, non-industrial ailments are the preponderating cause of sickness, disability and health impairment.

Fatigue is a common enough trouble, it is spoken of and written about a great deal, but septic or infectious foci are often more responsible for a muscular or mental fatigue than labor itself, alone.

Henry C. Linke, Ph. D., in the September, 1919 Journal Industrial Hygiene stated the results of the work carried on in a large manufacturing concern to determine the effects of fatigue on the work of shell inspection. A ten-hour day was in vogue with Saturday half holiday. This investigation was conducted from four angles:

1. By means of a reinspection.
2. By means of psychological tests.

3. By means of a careful production study.
4. By means of ordinary observation.

The tests were carried out over a period of three weeks. It was found that contrary to the orthodox belief that there is always a falling off toward evening, there was a slight increase. Instead of a consistent decrease in production with the lowest part at the end of the day, there was an intermittent increase with the highest rate of production during the last hour of the day.

Comparing the findings with those of a year before with a shorter working day, it was shown conclusively that a shorter day does not necessarily mean an increase in the rate of production.

It was concluded that the ten-hour day, per se, did not produce enough fatigue to prevent more work being done in the last part of the day than was done in the morning, directly after luncheon, or at any other part of the day. In view of this carefully thought out, worked out investigation let us not place too much credence in the ideas and plans of those who, as laborers, are always requesting a change of job, or those who, as writers, urge us to change the employment of the workers by a certain rule, or by a certain number of hours' work, to avoid fatigue.

Let me state, contrary to the usual belief that the shipyards are worse than a first-line trench, deaths in the Bethlehem Shipbuilding Plant at San Francisco in 1919, were four, one fractured skull, one electrocution, and two (one an epileptic) general fractures by falls from a height.

Two deaths are credited to the Alameda Plant, but one was due to the man being struck by an auto outside the plant and the other was an epileptic with cardiac decompensation employed only one week, not an injury case.

It will thus be seen that safety devices procure safety—that the Welfare and Safety Departments are working and producing results.

If this small death loss for one year, four fatal accidents with 35,000 men employed, be compared with the deaths due to autos alone the rate is altogether in favor of the well-organized and well-conducted industrial plant. C. W. Price, General Manager, National Safety Council, said in Worcester last March: "During 19 months of our participation in the war when 47,949 were killed or fatally wounded, no less than 126,000 men, women and children were killed in this country, 35,000 in industry, and 91,000 outside of industry."

The surgical deaths in the Union Plant Hospital were three for the year 1919, when 648 surgical operations were done including gall bladders, perforated gastric and duodenal ulcers, hernias, appendicitis, thoracotomies, bone cases, fractures, plates, bone grafts, etc. This is one for 216 cases operated on.

It is with the utmost pleasure and gratification that I pay the tribute to the management of the Bethlehem Shipbuilding Corporation, Ltd., and our Board of Directors, of an appreciative Chief Surgeon, Hospital Staff and Nursing Staff. There has been at no time a request or suggestion which bespoke hospital betterment, or improvement of the service in any form but it received a hearty response, genuine approval and the financial backing necessary to its consummation.

Col. Mock shows the arrangement in some of the large industrial organizations (see cut No. 1, p. 18). This corresponds to our present arrangement with Dr. W. E. Parker, Jr., as the head of the Department.

The Industrial Surgeon today *is* the development of an idea. He is the fuller fruition of the old mining doctor, the man who lived in the wilds and cared for the miners, their families, if any there were, and the scattered residents of the district. He is the result of a need and a demand. With him he brought some sort of system, some semblance of organization, and of these there was as much need as of his personal services in many instances.

What the Industrial Surgeon *can be* is problematic, as it will depend on those now serving the present-day industries, as to whether he proves himself merely valuable or invaluable, on legislative enactments, on Commissions' rulings, on the future of preventive medicine being taken over, largely or altogether by the State.

He should be the "center and circumference" of medical and surgical knowledge: the "ne plus ultra," the "sine qua non," the super-medical man. He should be one able to control the management, the workmen and disease. He should be competent to handle welfare and safety work, sanitation and housing problems, both within and without the Plant. He should be able, capable, wise, suave, firm, generous, kind, gentle, understanding, tender, strong, unerring in both instinct and judgment. How he shall be and become all this, and more, will have to be left to the present group of such men and those they train; to the medical schools (six have already a Department of Industrial Medicine and Surgery) which will enlarge an already unwieldy curriculum to embrace the essential and basic features of this growing branch of medicine and surgery; to the large industrial concerns to which it is ever becoming more certain that their medical and surgical departments yield as large a profit as any, in better health, lessened number of infections, quicker return to employment, increased appreciation of the workers, and improved morale.

Granted some growth already, some improvement over the old-time contract doctor, granted the necessity, the insistent call, the super-medical man will be the result unless unreasonable laws curtail his possibilities, and hedge him about with unnecessary and unwarranted technicalities stunting his growth and lessening his ardor.

The Industrial Surgeon of today is a promise for the future, not so varicolored as the rainbow, but, as the rainbow bespeaks that "No more shall the world be destroyed by flood," so the present day Industrial Surgeon, bespeaks that no more shall the industrial world be destroyed by preventable illness, infections or ignorance of sanitation.

DEFORMITIES OF THE HAND ACQUIRED AFTER ACCIDENTS.*

By A. GOTTLIEB, M. D., San Francisco.

These hand deformities may be classified into three groups: hysterical, functional, and organic. A deformity is however rarely a pure example of a group in view of the fact that injury is their common etiology, and that they present symptoms which are characteristic for more than one group.

I. HYSTERICAL DEFORMITY

A condition which is perpetuated from the suggestions obtained during the acute stage of the injury. In comparison with the deformity the injury was trivial, as a rule.

Etiology and mode of production: A neurotic temperament of the patient may be taken as a predisposing factor; injury to the soft or solid tissues of the hand or forearm as the primary cause.

The deformity develops about as follows: The wrist and fingers are held in that position which has been assumed to relieve pain during the acute stage. In course of time the pain has disappeared, but the hand has continued to remain in the selected attitude by the power of auto- or hetero-suggestions. Fear that any change of position may give rise to pain has created the autosuggestion in the patient, while the heterosuggestion is the outcome of strict instruction of the surgeon in charge not to move the hand at all lest harm and pain will ensue, or it is the result of complete immobilization with the cessation of all motion. After the retentive appliance is taken off, the patient is afraid to move the wrist and fingers because it really is painful—at least at first attempt. If at this time the patient is not persuaded to use the hand, it remains fixed in the position in which it has been immobilized. The deformity will be the more persistent the stronger the patient has been impressed by the after-treatment of a nurse or masseuse who, instead of explaining the actual cause of the malformation, will display sympathy and apply physicotherapy to restore function; both of which will only serve to imprint upon the patient's mind the gravity of his condition.

Symptoms: Typical for this group is that the complaints are exaggerated and the deformity is out of proportion with the injury and the organic changes. The objective findings, such as tenderness and coldness of the skin, stiffness of joints, atrophy of muscles, etc., can be attributed to the enforced rest in the early stage and the inactivity of the hand since the deformity has been assumed. A very limited part of these findings are due to the primary injury.

Treatment: Persuasion and re-education.[1] [2] [3] In accordance with the patient's intelligence, it is explained how the deformity has come about. After that, engaging the patient in a neutral conversation and withdrawing his attention from the deformity, the wrist and fingers are manipulated. When the patient is shown that the joints are movable and the muscles active, he will often display great surprise because he did not expect, nor believe it possible. This fact alone will induce him to active use of the hand. It is essential that the operator should have the full confidence of the patient and that this maneuver be repeated if the first one fails.

The changes from the injury and disuse must be treated as outlined for the organic group; but even after the hysteric element of the deformity has been overcome, the patient must still be informed why the physiotherapy is being applied. During the examination and treatment great care must be exercised not to suggest any new symptoms, but confidence must be awakened that a cure, at least marked improvement, is certain.

FUNCTIONAL DEFORMITY

This is the resultant of two antagonistic forces: one of them (A) is produced by the overaction of a group of muscles, and the other (B) by the inaction of its antagonist. The deformity is the difference of action of these forces and is always in the direction of the first, the greater of the two:

Etiology and mode of development: The primary cause is an injury, particularly to muscles and peripheral nerves. The injury is not sufficient to account for the loss of power in the inactive muscle group, and the findings do not indicate a partial or complete division of its nerve supply.

The trauma must have established on the side of force A, a source of peripheral irritation which causes a continuous contraction of this muscle group. Precaution not having been taken in the early period of treatment against the formation of this source, the permanent overstimulation and overaction has created a muscular hypertrophy and has increased its normal function.

The opposing muscle group, force B, does not display power equivalent to its volume and does not respond in proportion to the patient's volition. This phenomenon can be explained by the plus stimulation which force A receives, i. e., the artificial stimulus in addition to its physiological, while force B merely receives its physiological. In course of time this disturbance of balance weakens the muscles of force B in virtue of its constant underuse and its permanent stretching; partial atrophy and functional disability develops, and a wrong muscle habit becomes established.

Symptoms: The wrist and fingers are usually extended. The degree of the deformity varies with the injury, and the coexisting organic changes, such as old scars, muscular and joint fibrositis and bone anchylosis.[4] The mental attitude of the patient is good: he is anxious to get well. No element of suggestion and lack of will power is detectable. If the patient displays doubt in the possibility of being improved, it is because he has been subjected to various treatment and has lost faith in its effectiveness.

Treatment: The causes of the disability are explained and the patient is taught how to execute normal motion at his own volition. He must completely relax all the muscles of the extremity and successively contract selected muscles to secure motion of the wrist and separate finger joints. Every day the same movements are repeated. The

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patient is informed that success largely depends upon his efforts to execute these motions voluntarily.

While treating a functional case one will notice how the mental attitude of the patient varies from that of the hysterical: the former responds willingly and with interest to the instructions, and his attention must be centered upon the hand; the latter is apprehensive to suggestions and mistrustful to muscle training; his attention must be diverted from the hand. The organic changes are dealt with as outlined below.

3. ORGANIC DEFORMITY

A condition in which the function is interfered with only by pathological changes in the anatomy of the hand or forearm or both.

Etiology: Injury to the soft or solid tissues is the primary cause; the contributing factors are: long-continued immobilization with forced inactivity, and as Goldwaith [5] says: "Loss of interest in the case by the surgeon as soon as the acuteness has passed, with the result that persons of limited experience are made responsible for the later stages of treatment."

If anywhere restriction of motion is harmful, it ought to be in so complex a mechanism of motion as the hand, where forty muscles move twenty-seven bones and a complicated apparatus of ligaments bind them together. This explains why injuries to the hand give the large number of permanent disabilities.

Pathology: The most frequent changes are extensive fibrositis within and contractures of the skin, fasciae, tendons, muscles, and joints of the hand and forearm. A small number of cases present bony anchylosis and partial or complete muscular paralysis. Atrophy of muscles and weakness of disuse and more or less circulatory disturbances are found in all these cases.

Symptoms: The position of the fingers, mostly contracted in flexion, the stiffness of joints, the weakness of muscles and the other symptoms which restrict motion, differ according to the character and extent of the injury and the thoroughness of the contributing causes. One may assert that the severity of the symptoms and the probability of permanent crippling is in direct proportion to the time lost in needless rest and to the inadequate after-treatment, and not to the severity of the primary injury.

Treatment: Prophylactic physiotherapy would prevent many a crippling of the hand. Its object is to keep the muscles functioning, the tendons from adhering to their sheet, the joints from stiffening and the trophic changes from developing. This is attained by means of physical measures begun as early as the third day after the injury.[6] [7] [8] The treatment should be given by the surgeon in charge of the case or at least under his strict supervision. Great harm can result from inefficient physicotherapy in the early stage after the injury.

In a well-developed deformity a thorough trial should always be given to physicotherapy before any operative procedure is undertaken to reconstruct anatomic damages. Too hasty forcible correction of stiff fingers, joint resection, tendon loosening, and other operations on the hand are rarely successful and usually lead to greater disability than before.[9] [10] [11] [12]

The objects of physicotherapy are: to soften and stretch contracted tissues, to increase muscular power and to regain motion of the finger and wrist joints.

The hand, and the forearm when indicated, is exposed to a stimulating remedy which produces an artificial hyperemia. The agents most suited for this purpose are: the hyperthermal bath, with or without galvanic ionization; the high-frequency current in the form of diathermy, and the radiant or convective heat. While the hand is thus exposed, the joints are passively manipulated and the scar tissues stretched. When active motion is possible the patient grips his fingers over a rubber ball or a piece of rubber hose and presses them also between the fingers. This active-resistive exercise increases muscular power while the stimulating remedy is at work. After about twenty minutes' exposure, the hand and forearm are massaged and vibrated to dissipate the artificially-created effusion, and each joint is moved within the limit of pain. A very efficient means to loosen adhesions in the fingers is the use of the vibrator. While the hand is exposed to light and heat, it holds with all its strength a working vibradote which best conforms to its hollowness. Further power and motion are gained by active and resistive exercises on apparatus. These should be constructed on the principle of raising graduated and measurable weight which is increased in proportion to the growth of muscular strength. The apparatus used are: for flexion and extension of the wrist; for flexion and extension of the fingers, and for rotation of the forearm. Besides that the patient is advised to do simple finger movements, such as crumbling of paper, compressing a rubber ball or piece of hose, which can be carried in the pocket, and other simple ones which help the flexors of the hand and forearm.

Nothing surpasses, however, the voluntary and unconscious use of the hand for productive work at home and in the workshop. At home he may do laundrying, window-washing, and other domestic work which necessitates grasping various objects with the hand; in the shop he may use the tools of his trade, which not only restores the hand but also accustoms him to work with a hand which may remain permanently disabled. It must be explained to the patient that this work is curative and will not lead to a premature discharge with loss of compensation. There should even be no objection that he gets a small remuneration for it, although still receiving compensation. This work is a therapeutic adjunct in reducing disability and should therefore be encouraged.

A brace should be worn during the night and in the hours of rest. The main object of it is to retain the correction. The simplest brace is the Krukenberg glove,[13] or such a modification of it which has elastic tapes attached to the fingertips and has accumulators for these tapes on both, the flexor and extensor, surfaces of the wrist.

With this arrangement of elastic pulls, the glove serves not only to keep the correction and to stretch the tissues, but also to increase the power of muscles when the fingers are flexed and extended against the resistance of the elastic tapes. Of the other corrective appliances those devised by Schede [14] have the same threefold effect, and are the most commendable.

In conclusion I wish to add that about every fortnight all hand deformities should be measured and the motion and muscular strength recorded. The finger motion is measured with a pleximeter or a protractor of a cardboard with the scale marked in degrees [15] or by means of a lead tape, and then graphically represented on paper. [16] The muscular strength is measured with a dynamograph or by squeezing the partly inflated cuff of a tycos sphygmomanometer and noting the height to which the mercury can be raised.

The patient must be informed of any improvement because it will encourage and convince him that the treatment is effective and is restoring his hand to usefulness.

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EXAMINATION OF EMPLOYEES IN INDUSTRY. *

By CHARLES ALFRED DUKES, M. D., F. A. C. S., Oakland, Cal.

Industry exists solely for the purpose of converting raw materials into finished products of marketable value. Labor is employed in the industry for the assistance it is in the accomplishment of that purpose, and its value is fixed by the skill and facility of its effort in that direction as manifested by the quality and quantity of its output.

Industrial Medicine may be defined as the theory and practice of medicine applied to the purpose of preventing and alleviating sickness and injury among industrial workers in order that they may enjoy the benefits of continuous productive employment.

In August, 1918, Samuel Gompers is quoted in the official U. S. Bulletin as testifying that it is his opinion—speaking in his official capacity as president of the American Federation of Labor—that physical examinations of workingmen were necessary for the prevention of the spread of contagious diseases and for the protection of the men who might be placed at work for which they are physically unfit.

One of the greatest sources of saving to the employer is the physical selection of employees for work. This is done by the physical examination of all applicants for work before employment. The placing of all comers on jobs without any effort at a physical selection for their work is responsible for a great financial waste which cannot be shown in dollars and cents but which, nevertheless, is very evident.

This waste is due to the following:

1. The employment of the physically unfit who later must be discharged because of inability to do the work.

2. The employment of the physically unfit who continue to work for a few months or a year with a gradual decrease in their efficiency due to advancing disease until finally they are forced to quit work. They have been a source of loss to the concern from the time of their employment.

3. The employment of the physically unfit who, because of their condition, are subject to frequent accidents. Every accident is a loss to the concern.

4. The employment of the physically unfit who suffer accidents which ordinarily would not be serious, but because of the coincidental, unknown physical condition, are fatal, or at least, cause prolonged disability. The loss to the concern from this source is far greater than most employers are aware of.

5. The employment of a person who has a contagious disease who communicates it to others of the working force. The acute contagious diseases are more common, but tuberculosis and syphilis cause a great loss.

6. The employment of the mentally deficient who never can be fitted to a job, and who form a certain percentage of the floating labor on account of this fact. An observant industrial physician will pick out this type during the course of an examination.

The old employees:

Complete physical examination of, either periodically or whenever some condition arises showing the need of a general survey.

(a) To discover threatened diseases early, while still preventable and curable.

(b) To discover any existing condition that makes the employee prone to accident, or to cause accidents to others. It is just as important to survey the human machine to prevent accidents as it is to survey the mechanical appliances of a plant.

(c) To rule out those with contagious conditions to prevent the spread of disease.

(d) To discover those with handicapped con-

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ditions, either physical or mental and to place them at types of work which will not be hazardous for them and where they can still be efficient in spite of the handicap.

(e) Examination should precede the treatment of any condition, no matter how minor, thus preventing the administration of a wrong type of treatment through lack of knowledge of the true condition or of coincident disorders.

Most industries make it imperative that no old employee be discharged because of physical defects, but that they shall be surveyed or examined at regular intervals and recommendations made as to their fitness for employment, which rules are faithfully carried out by those in authority.

It is fair to assume that those rejected under these physical examinations would have lost their positions because of inefficiency or the exaggeration of their infirmities or sickness. Consequently it is also fair to assume that before the end of a year they would all have been the cause of expense to the industry as well as loss to themselves. The amount of loss to the industry is a difficult one to determine as it would vary from a few dollars to several hundred dollars per capita. Averaging the cost of training a man at $45 times the number of men rejected would probably be a fair estimate of the loss in time and labor, plus the loss of taking care of these men because of their increased disability.

A news comment on "Medicine in Industry" in a recent issue of the Saturday Evening Post, showing the interest of the lay press, is as follows:

Many employers are finding that great profit results from the establishment of a system of physical examinations of all applicants for work before employment. When men are simply hired without being subjected to a preliminary investigation the outcome is frequently mutually unsatisfactory. Often such men are unfit for the work in hand, and in a few months they are sure to show a gradual decrease in efficiency due to the progress of disease or a dislike for the occupation they have engaged in. When a company hires men who are wholly unqualified for the service at hand the corporation is sure to lose through increased accidents and large labor turnover or because or unrest created in the organization by these undesirable employees.

It has been found that in industries where medical examinations are unknown, the prevalence of acute contagious diseases is far greater than in those businesses where all prospective employees are carefully investigated. It is also a fact that such examinations enable the placement of men in positions where their efficiency is greatest.

Another investigator makes the statement that the practice in the United States with reference to medical work in industry indicates an average annual cost of $2.50 per employee for medical examinations. Let us assume that one of our big American industries employs 200,000 workers. Let us further suppose in this industry there are no medical investigations of applicants for jobs. In such an industry 20,000 men, or ten per cent. of those employed would be totally unfit for work and would soon be dismissed. This means 20,000 men added to the labor turnover, and if the cost of the labor turnover in the industry amounts to say $40 per person, then the employment of these undesirables has cost the industry $800,000. Now, if we accept the figure of $2.50 for each examination, as stated above we find that this particular industry could have adopted a system of examining all applicants or prospective employees at an expense of $500,000 annually. The yearly saving from the plan, therefore, to the industry would have been $300,000. It is further true that additional benefits from medical examinations of this kind would have resulted to all the individual companies making up the industry in question.

An authority on the subject of industrial hygiene called attention recently to one instance where an examination of 15,000 applicants caused the rejection in a certain industry of forty-four cases of acute contagious diseases which would have caused the companies in question great loss, due to the starting of six different kinds of epidemics that undoubtedly would have started if the diseased applicants had been engaged.

The charts which we are showing illustrate the types of diseases and disabilities which have been found in the examination of several thousand employees. The lessons to be learned can be readily deduced from these disabilities and what it would mean to the industry to have had these men misplaced.

GRAPHIC CHART SHOWING DEFECTS FOR WHICH APPLICANTS WERE REJECTED

Number of applicants examined			12014
Number of applicants rejected			1942
Percentage of rejections			16
Blood pressure			581
Teeth			382
Heart			302
Hernia			274
Eye			264
Miscellaneous			236
Extremities			220
Genito-urinary			210
Lungs			82

GRAPHIC CHART SHOWING DEFECTS FOUND IN EMPLOYEES AND APPLICANTS EXAMINED

Number of applicants examined			12014
Number of employees examined			6924
Total number of examinations			18938
Teeth			4706
Extremities	Flat feet	1700	
	Varicose veins	675	
	Miscel.	399	
	Amputations	57	
			2831
Eye			2427
	Defects of vision	2285	
	Diseases	113	
	Blindness, one eye	29	
Diseased tonsils			2177
Blood pressure			1957
Genito-urinary			1357
Skin			858
Heart			721

Hernia	696
Fractures	551
Spinal defects	509
Ear	448
Lungs	169
T. B.	56
Other	115

The high percentage of rejection shown by this table and the large number of defects found, should not astonish us when out of over 32,000 examined school children over 16,000 were found to have defective teeth. New York City estimated nearly 17.3 per cent. of the school children were ill-nourished, while in the draft examinations many Boards rejected from 40 to 67 per cent., and in one district in East Boston 1675 men were examined to secure 214 healthy men.

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The Saturday Evening Post.

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ROENTGEN TREATMENT OF UTERINE HEMORRHAGE.*

By LYELL C. KINNEY, M. D., San Diego, Cal.

The treatment of atypical uterine hemorrhage is the most satisfactory task referred to the radiologist. Most of these patients are seen after many months of bleeding, with severe anaemia, and frequently they have been curetted several times. In spite of this history the prognosis of a suitable case is almost invariable. It is practically certain that the bleeding can be controlled within four weeks and a rapid general recovery instituted by that time. The change in these women is little short of marvelous, and is most grateful to them and a source of great satisfaction to the attending physician as well as to the roentgenologist.

In spite of the brilliant results in properly chosen cases the sine qua non is an accurate diagnosis. Most of our patients are referred by gynecologists after careful study, and when they are referred otherwise they are thoroughly studied with a competent gynecologist. It is only under such painstaking co-operation between a pelvic surgeon and the roentgenologist that any actinotherapy is justified.

Uterine hemorrhage is only a presenting symptom, never a diagnosis, and the underlying pathology must be ascertained before any intelligent treatment can be instituted. In approaching a case of prolonged atypical hemorrhage one must eliminate, first, the accidents and incidents of pregnancy, second, pelvic infection, and third, malignancy. Having ruled out this triad practically every case of uterine hemorrhage can be controlled by roentgenotherapy.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

However, efficient X-ray treatment usually involves the establishment of the menopause and sterility, and, therefore, the X-ray will only be called into use after the general physical and mechanical conditions have been ruled out or properly treated. There are cases on record where the ovaries have been protected during X-ray treatment and normal menstruation and normal pregnancy have followed, a clinical cure. However, the danger of the complete arrest of menstruation limits the X-ray treatment of uterine hemorrhage to those conditions where the establishment of a menopause is justifiable.

We have found roentgenotherapy efficient and suitable in the following types of cases:

1. In patients that have atypical bleeding from a grossly normal uterus nearing the menopause or as an incident of the menopause the hemorrhage can be controlled and the menopause established in practically 100% of cases.

2. In uterine hemorrhage from small fibroids at or near the menopause the arrest of the bleeding and establishment of the menopause are certain, and the fibroid will disappear or decrease in size and become symptomless.

3. Patients that are poor surgical risks with uterine hemorrhage from any type of fibroid can be relieved from their symptoms of hemorrhage quickly and effectually by X-ray.

4. There are certain cases where uterine hemorrhage and dysmenorrhea are so destroying the patient's emotional and mental balance or so undermining her physical condition that a menopause is justifiable, and where it is justifiable it can be secured easily and certainly with roentgenotherapy. I believe that X-ray is distinctly indicated in this class of cases.

On the other hand roentgenotherapy is contraindicated where the establishment of a menopause is not justifiable, and it is contraindicated in the treatment of uterine hemorrhage where that hemorrhage is a symptom of an urgently surgical condition. We may group these classes as follows:

Uterine hemorrhage in adolescence can be readily controlled without danger by radium and it is not justifiable to assume the risk of the menopause except where radium is not obtainable or in extreme cases. In the hemorrhage of uterine fibroids in young women the patients should be given the chance of a myomectomy if possible rather than hazard their expectancy of motherhood. Uterine hemorrhage accompanying a submucous or sloughing fibroid is the presenting symptom of a distinctly surgical condition and should only be treated as such. The treatment of large fibroids with symptoms of pressure can be successfully carried out with X-ray and is certainly justifiable in those cases presenting serious surgical counterindications. But whether the roentgen treatment of large fibroids in patients that are good surgical risks is justifiable is still an open question. I do not believe that it is justifiable and I consider that the extirpation should be strongly advised for every patient having a large fibroid or with definite pressure symptoms. Furthermore, uterine hemorrhage from malignancy

is an indication for either radium or surgery, and one must be constantly on guard to see that these cases have their radium or their surgery at the earliest possible moment.

Those of our surgical friends who have not seen the light find many arguments against actino-therapy, but most of them are judging the present-day treatment by the accidents of the past, and would be highly indignant if we judged their surgery by the mistakes or inexperience of earlier days. The X-ray treatment can now be given with practically no discomfort or nausea and without interfering with the daily routine of the patient. The danger of injury to the skin is nil with modern methods and certainly less great than dangers of disabling adhesions or the accidents of hysterectomy.

The main argument against actino-therapy is the supposed danger of subsequent malignant degeneration. This may be good theory but the experience of ten years does not bear it out. The literature shows the incidence of one-half of one per cent. of sarcoma in fibroids, but even if this percentage represented a fatal mistake it does not equal the best statistics of mortality following hysterectomy, and it must be remembered that at least 87% of uterine sarcomata will recur shortly after excision. Regarding the possibility of carcinomata following the X-ray treatment of fibroids we can state definitely that it does not occur. Dr. Pfahler stated at Atlantic City in June, 1919, that he had never seen malignant degeneration following X-ray treatment in his series of 150 cases. The Freiburg clinic reports four hundred cases of successfully treated fibroids where no malignancy has developed. Beclere of Paris reports four hundred cases dating back to 1908, none of which have developed malignancy. This fully bears out the contention that a symptomless fibroid is an innocent fibroid, and, further, this answers the theoretical objection that a residual fibroid after actino-therapy will develop malignancy.

The final argument that is raised is the danger of overlooking concurrent surgical conditions. However, it is no more probable that one will find a diseased appendix or diseased tubes or ovaries in these patients with uterine hemorrhage than in any other patient that comes under observation. It is no argument against radiotherapy that these conditions may exist and not be relieved by the treatment. A careful diagnostician will bear these possibilities in mind and treat them surgically whether or not they accompany uterine hemorrhage that would otherwise yield to radio-therapy. But after eliminating concurrent surgical conditions and malignancy there are a large number of women in the third and fourth decade to whom roentgenotherapy offers a complete, safe and certain clinical cure from these distressing symptoms.

Certain advantages are claimed for radium in the treatment of uterine hemorrhage in contrast to X-ray, but it must be remembered that radium demands intrauterine application and it is no more certain and no more efficient than X-ray treatment.

The technic of X-ray therapy in uterine hemorrhage varies widely. Beclere has consistently used the weekly application of three Holzknecht units and established menopause in sixty per cent. of his cases within three months. Wm. Meyer is giving a single treatment of forty to ninety minutes and in his last twenty-five cases, ranging from 17 to 45 years of age, established a menopause at one sitting. It has been our experience that the average case will yield completely to thirty-six filtered erythema doses, irrespective of how they are given. It is our policy to divide the abdomen and back into twelve areas. Three areas a day are given a massive treatment thus extending the series over four days. A three to four weeks interval is allowed between each series. The series are repeated until the patient has missed one menstrual period and developed constitutional symptoms of the menopause. Our laboratory is situated so that it is possible to give X-ray treatments practically out of doors, and only four of our patinets have complained of discomfort or nausea.

Thirty cases with uterine hemorrhage have been referred to us for roentgenotherapy in the past four years. With one exception these patients were 39 to 50 years of age. They were distributed as follows: Four cases of myopathic hemorrhage; twenty-two cases of small intramural fibroids; two cases of fibroids reaching to the crest of the ilium; one hypertrophic endometritis with hemorrhage after repeated curettage; and one mental case, thirty years of age, where excessive hemorrhage demanded a menopause. One case has been omitted from this series—a young girl twenty years of age with tuberculosis, asthmatic attacks and excessive menstruation. The treatment was discontinued as the asthmatic attacks were increased by the X-ray.

The seriousness of hemorrhage has varied from flooding during the time of a regular period to a constant flow of four months' duration. The duration of symptoms has run from six months to as high as ten years. Fifty per cent. of these patients faced an immediate hysterectomy as the only other alternative. The results have been uniform in every case. The hemorrhage was completely checked and menstruation ceased. A careful review of these cases shows no recurrence of symptoms and no pelvic complications following treatment. Six of the cases did not menstruate again after receiving their first X-ray series. In twenty-two cases there was an increase in the flow in the first subsequent period, followed by a normal or sub-normal second period, and a complete arrest following the third X-ray series. Two cases required a fourth X-ray series to establish a menopause. In the two large fibroids noted the tumor decreased so that it was not palpable above the symphysis.

It is our custom to warn each patient that she may have an excessive period after her first X-ray series and she is advised to remain in bed during this entire period. This precaution keeps down

any alarming flow at the first subsequent period and it has been unnecessary to take any precaution after the second series.

The following two cases are reported in detail as they typically represent the entire series:

CASE NO. 2. UTERINE HEMORRHAGE FROM A SMALL FIBROID

Mrs. C. F. Age 41. Referred by Dr. Francis Meade, November 26th, 1917. The patient complained of excessive flooding, of periods lasting from ten to twenty-one days, and this was of two years' duration. Pelvic examination showed a small intramural fibroid, not palpable above the symphysis, about the size of a lemon. Otherwise the pelvic organs were negative. In addition the patient gave a history of pulmonary tuberculosis and duodenal ulcer, both of which were confirmed by X-ray examination. The patient was referred for the establishment of the menopause. She was given three X-ray series of twelve treatments each, on November 26th, December 12th, 1917, and January 10th, 1918, respectively. The first period was still excessive but not as free as formerly, the second period was normal and she has not menstruated since. After her X-ray treatments she was sent to the mountains for the tuberculosis. Her physician reports, on May 7th, 1920, that she had no pelvic symptoms, that her tuberculosis is now latent, and that she had had no atypical bleeding.

CASE NO. 9. HEMORRHAGE FROM A GROSSLY NORMAL UTERUS

Mrs. A. L. Age 40. Referred by Dr. B. J. O'Neill, September 29th, 1918. This patient was operated upon in 1914 and a chronically inflammed appendix, tube and ovary were removed. The uterus was found to be tied down by firm adhesions, the other tube and ovary were left in situ. In 1916 a cholecystostomy was done to relieve a chronic cholecystitis. Following her surgery in 1914 the menstruation was normal until the past summer when it became excessive. There had been six weeks of constant flooding in spite of repeated packing and curettage. Pelvic examination showed a uterus normal in size and contour, firmly adherent but otherwise negative. Microscopic examination of uterine scrapings was negative. This patient was given three X-ray series. The hemorrhage stopped immediately following the first series. Her subsequent period started normally but became excessive after a long motor trip. The second period was normal and was the last. On February 1st, 1920, this patient was seen still suffering from upper abdominal adhesions but she has been entirely free from hemorrhage and pelvic symptoms.

I desire to protest strongly against the indiscriminate use of X-ray and radium. Uterine hemorrhage demands an early and searching examination and the greatest accuracy in diagnosis. If the physician who is handling these cases can not reach an early decision he should have the immediate co-operation of an expert gynecologist. It is only by so doing that we can keep down the mortality from carcinoma of the uterus and prevent the development of serious surgical complications. On the other hand, in the conditions we have discussed, X-ray and radium are specific in the treatment of uterine hemorrhage and this should be borne in mind in the treating of those cases where surgery is not urgently indicated.

HEAT THE MOST PRACTICAL AND PROMISING TREATMENT IN UTERINE CARCINOMA.*

By J. F. PERCY, M. D., San Diego, California.

Today we are limited in the discussion of the cancer question merely to the terms of its treatment. Practically nothing regarding any other phase of the disease is known, certainly not to a degree to be of any value in its management from the standpoint of therapy. The basis of all our treatment of cancer is still empiric, as it always has been, and yet it can truthfully be said that progress has been made, except possibly in the inoperable types as far as it relates to the use of the cold steel knife.

There are five methods today for the treatment of cancer that have a rightful claim to the consideration of medical men. They are the knife, X-ray, radium, electro-coagulation (diathermy), and heat. All five of these in the hands of those most familiar with their correct and rational use have undoubted cures to their credit, and I say this with full appreciation of the significance of the word "cure" as it is related to the question of scientific accuracy especially in the treatment of cancer.

It is not necessary to extensively discuss the knife in the treatment of this disease at this time because the arguments for and against its use are to well known to need recapitulation here. There is no question of its great value could we always be certain that in its use it could be made to cut wide of the disease and in no instance invade the regions where the cancer cell is developing. Because of this uncertainty as to whether the knife will be the means of disseminating the disease into new areas we witness the effort being made everywhere by surgeons to find a more reliable substitute for it in the treatment of cancer. I expect to live to see the day when surgeons will universally condemn its use because of this undeniable and uncontrollable danger. There is another phase of the use of the knife that is usually ignored when it is advocated in the treatment of cancer. I refer to the classification of the type of case that presents itself for treatment. Is it operable or inoperable, and what are the signs and symptoms governing the decision to put it in one or the other of these classes? My own work has been almost entirely with the inoperable type of case, and yet my technic and its results are frequently discussed with the operable form of the disease.

The X-ray in superficial growths especially of the skin is of undoubted value. It does cure by destroying them. It is in the deep-seated growths that the consensus of opinion as to the real value of this agent have not yet fully crystallized. One most interesting and valuable fact has come out of its intensive use, however; the really tremendous inhibiting power of the skin in preventing the penetration of the rays. This seems to be

* Read in the section on Gynecology and Obstetrics, Medical Society of the State of California, Santa Barbara, May, 1920.

one of the chief hindrances at present to its most efficient use.

The storm center for the treatment of cancer seems to hang over the question of the use of radium. It has moved into the place formerly held by the X-ray. And, like all agents, with tremendous potential energy for good or evil in the treatment of disease has not yet reached the place where its possibilities for good are fully understood or its limitations well defined. That radium, like the X-ray, has a definite and valuable place in the treatment of certain forms of malignancy there seems to be no question. Some of the best trained and most experienced medical minds, both here and abroad, are giving their best efforts with enthusiasm to the clearing away of these problems, and the results of their work even as far as it has gone can neither be questioned or denied.

A recent writer has reported sixty per cent. of his supposedly inoperable uterine cancer cases alive and well three, four and five years after their treatment with radium. At present he is engaged on the very practical problem of trying to determine why his thirty or forty per cent. treated by the same agent did not recover also. He mentions an experience which he observed in the use of radium in the treatment of uterine cancer; that in some cases where it seemed to have "failed completely and the treatment was abandoned as hopeless, the woman returned months later immeasurably improved or even clinically cured." But this writer does not seem to know that this experience with radium which he explains on the basis of some "mysterious force" at work is not an uncommon one with any or all of the methods that have ever had any standing in the local or general treatment of cancer. He also speaks of a probable "cumulative action from the radium" as a possible explanation of the unexpected good results. The foregoing is a very brief statement of one side of the picture regarding the value of radium in the treatment of cancer, the favorable side.

The other is made by those who have used it more or less thoroughly and as they believe intelligently, and have abandoned its use in any form of cancer as too dangerous or uncertain in its effects and therefore lacking in any results that were worth while. In one of the largest Eastern clinics with an almost exclusive cancer service, which it was my privilege to visit during the past winter, it was openly claimed in one of their public clinics that they had practically excluded radium from the institution in the treatment of any form of cancer. The statement was distinctly made, first, that they had a large quantity of radium, and, second, that its use in the hospital was directed by a physician "who probably knew more about the correct use of radium in the treatment of cancer than any man living either in this country or in Europe." They emphasized not only their lack of results as far as benefits to their patients were concerned but they especially referred to the distressing sequela which so often gave rise to a form of permanent suffering unequaled by any other method so far developed for the destruction of a malignant mass. This is the other side of the picture, the unfavorable one.

I believe that both of these pictures are overdrawn, and the fact that they are will give point, I trust, to the plea that I shall make at the end of this paper for a more comprehensive study of all the methods that give any promise for the cure of this disease. As I proceed I shall try and discuss as judicially as I can my personal views based on my experience as to the relative value of all five of the methods of the treatment of cancer under consideration at this time.

The only effective substitute for the cold knife in cancer is the hot one, and when the technic of its correct use by surgeons is learned, there can be no question as to its final place in the treatment of all forms of malignancy. The fundamental thing in the use of heat which has not been grasped in its entirety by those who wish to make use of it in a successful way is that the results depend on the dissemination of heat until the tissues known to be involved in the malignancy and those also only suspected to be involved are fully infused with the heat. This means that it is not the number of minutes that is given to the dissemination of the heat into the tissues, but the one of whether it has really made the tissues so hot in the course of the treatment that the cancer cells can no longer live there. In other words, surgeons in speaking of this technic refer to the number of minutes that they employ the heat, forgetting that they cannot correctly speak of the treatment in terms of minutes, for time is not the important factor in its most effective use. The essential, the necessary and the important element, I repeat, is a degree of heat that the laboratory and clinical experience has shown will kill the cancer cell in the tissues, regardless of whether it takes a long or short time to get it there, and in this regard each case is a law unto itself.

The statistics of the late Dr. John Byrne following his use of the high heat in cervical carcinoma are a sufficient defense, if any is needed, against any question that may be raised as to the value of the use of the cautery knife in carcinoma. This surgeon reported 60% of his cases alive and well five years after the high amputation of the cancerous cervix by the actual cautery followed by the infiltration of the unremoved tissues with heat until they were of the consistency of "horn." This percentage of cures was obtained not on a few cases for the material which came to him was "enormous." His results, published in 1889 in a remarkable monograph entitled "A Digest of Twenty Years' Experience in the Treatment of Uterine Cancer," have never been equaled, and we must remember also that he had no operative mortality following his technic in this operation.

One of the serious difficulties following the use of the X-ray, radium or electro-coagulation in the treatment of malignancy is the fact that in the event of their failure to relieve or cure usually nothing further in the way of surgery or the heat technic can be used. The reason for this is that

the results from either of these agents as far as the normal or abnormal cell is concerned cannot be regulated so as to produce their maximum effects only on the malignancy. The practical consequences of their use too often is to destroy not only the abnormal cell but the normal as well, and too, far beyond the area of their immediate application. It is for this reason that the operating surgeon who has one of these cases referred to him for surgical treatment after the use of these agents or methods is loath to attempt it for fear, mainly, of a poor repair following his operation. In addition to this his difficulties are frequently increased because the tissues invaded by his knife bleed in a most persistent way. Another more recently recognized danger following the use of radium and the X-ray especially are the changes produced in the blood of the patient. These alterations in the blood produce in an appreciable percentage of cases an early, dangerous and even fatal result. Electro-coagulation is a little less formidable in this regard than are the other two. Another fact should be referred to in this connection also. Radium and the X-ray frequently leave, as far as the pelvis is concerned, a rather formidable type of adhesions and scar tissue. These are usually found in the form of bands and masses that also prevent subsequent successful operative procedures with either the hot or cold knife. I am speaking now from a rather large surgical experience with this class of cases. Many of them developed their adhesions in my own clinic where for some years I followed the so-called deep penetration method by the X-ray, subsequent to the use of the heat technic. In addition to this many cases were sent to me through the courtesy of colleagues, for the heat treatment, that had previously had exposures, not only to the X-ray but also with radium and diathermy. I have indeed had cases under my care who before I saw them had been treated consecutively by all three of these methods. Where I felt warranted in opening the abdomen with the hope that I might accomplish something, at least in a palliative way, I found that where these agents had been used intensively that the surface appearance of the intestines, as they lay together in the lower abdomen, was apparently not altered. But when I tried to get into the pelvis it was impossible to do so because of the perfect adhesions between the gut coils. The intestines were glued together in a remarkably effective way and, too, without any macroscopic evidence of a previous inflammatory reaction. There was also a persistent and at times an alarming oozing wherever the tissues that had been acted upon by these powerful agents were disturbed by my fingers and scalpel. This was especially true of the abdominal incision.

The chief disadvantages of the heat treatment are two. First, in cervical carcinoma the development, in a small proportion of cases following the use of the heat, of a vesico-vaginal fistula. This is usually manifest within a week or ten days. Second, a secondary hemorrhage coming on about the fourteenth day after the treatment. It should be stated, however, that I have had none of these hemorrhages among my own cases, neither have I heard of any in the practice of other surgeons since making it the rule to tie both internal iliac and ovarian arteries. One of the surprises to the novice in the use of the heat in the pelvis is the remarkable post-operative freedom from pain and suffering. This leaves as the chief objection to the heat technic the injuries to the bladder. This can be dismissed in a few words. If cancer has already made changes in the base of the bladder it is merely abandonment of the woman to her fate not to infuse heat into it when it can be done so easily. I have had no trouble with my patients when fistulae develop, as they sometimes but not always do, because I always explain to them in my preliminary statement that I may make a hole in their bladder and that it is much better for them that I do it than for the cancer to be the cause of it. In addition to this I never minimize to the patients or to their family what a horribly disgusting and offending thing a patient with this condition is to everyone, especially to those who have to live in the same house, and that this remains true until the fistula is closed. I have found it to be the rule that the patient would rather have a hole in the bladder with no cancer than no hole and the cancer still there. They are always told that the fistula probably can be successfully closed if it does not do so spontaneously within six weeks or two months. In some cases I have had to convert the upper part of the vagina into the lower part of the bladder. These cases have a useful bladder, one of them now over fourteen years.

It can also be said of heat, when used in the treatment of cancer, that it destroys an immense number of malignant cells just from its minor or surface application. This is especially true in the cautery surgery of breast cancer, in the axilla, the mouth, the neck, along the ureters and iliacs, and in the parametrium, to mention no more. To get this result you do not have to get the high degrees of heat through introducing the heating head into the deeper structures; a surface application of a temperature sufficient to melt fat is all that is required, after the skin is opened or removed. In this way you can both treat and preserve important structures, including the nerves, blood vessels, the bladder, intestines and rectum.

In applying heat to these vitally important regions you are permitted some regulatory supervision over the dosage so that you can destroy cancer cells alone or you can carry it on to the degree sufficient to melt down a large and dense collection of these cells. But the most important thing of all (and I want to call your attention to it again) is the fact that when heat has been applied in a destructive way to cancer-bearing areas, the injury sustained by the normal structures is not sufficient to prevent a reasonably good repair. If the local disease is destroyed, by the heat, the filling-in process, or repair, which follows is often a remarkably good, as far as function is concerned, imitation of the normal structures.

I cannot let the opportunity, that your section has given me, Mr. Chairman, to present the claims of heat in the treatment of cancer, pass without a plea for the earnest consideration of another important phase of the cancer question. I refer to the fact that there is today no concerted scientific effort to study cancer from the standpoint alone of *treatment*. An immense amount of splendid effort is being expended to clear the question as to the origin of the disease, but the results so far have been greatly disproportionate to the time, money, equipment and brains given to unraveling the mystery. There is a constructive scientific community of interests for the study of the cause or causes of cancer but nothing has been done along the same lines to clear up the moot points in its treatment. We hear, and even know, of the benefits following the use of the knife, of radium, of electro-coagulation, of the X-ray and of heat, and as well of various other methods that have undoubted cures to their credit. But they are reports of individual workers or of institutions devoted only to their own conception of what is best in the treatment of this disease. We have standardized the use of quinine, of digitalis, of mercury, of morphine, of salvarsan and the various antitoxins, to mention no more. By the same token, we have for the successful treatment of cancer, at least in some of its manifestations, a sufficient number of agents and methods to fix our attention today on this very important aspect of the cancer question. Each advocate of a special treatment knows what he can do with it, and as well what he cannot do; but no individual or institution has or can under present conditions correlate all the knowledge of the successes and failures of all the workers and give it to us as a great gift.

The explanation is not far to seek. Each method recognized today as worthy of consideration in the treatment of cancer is either an individual or a group proposition. Each one of these individuals or groups at present are too much concerned with their own hopes based on their methods or technic to investigate in a constructive way the most important part of the valuable work in the treatment of cancer really accomplished by the other groups. If this could be done in the near future on a large number of cases it would soon result in a standardized treatment that would be recognized by both the profession and the public as the greatest step toward the clearing up of the cancer treatment question so far developed.

NASAL CATARRH

By C. A. Phelan, M. D., San Francisco.

Catarrh, from the latinized form of the Greek word, "catarrhus," is a generic term used to denote the sort of fluid flow discharging from a membranous surface. This may be a simple serous or sero-mucous, mucous, muco-purulent, or a sanious catarrh, and the ratio of seriousness is placed in the above order. A catarrh may be acute, subacute or chronic, with more or less fever.

As applied to the nasal region, catarrh is not a disease but only a symptom, and may be a manifestation of many and varied pathological states of the nasal chambers, or a local manifestation of a systemic condition, sometimes of the simplest and sometimes of the most serious.

Nasal catarrh is a subject of vast importance for it is often met with in practice since it is a common accompaniment of many general diseases. In Influenza nasal catarrh is always present, and it is undoubtedly by the nasal discharges that the bacillus is spread about and the contagion conveyed from person to person.

Always examine the patient's handkerchief because this is the pathological flag. In rhinorrhoea, the discharge is mostly serous, merely wetting the handkerchief, staining it but little, and not stiffening it at all. In chronic rhinitis, the flow is mostly a mucous fluid which adheres to the handkerchief and agglutinates its folds, but which does not discolor. In purulent rhinitis, the discharge is yellow-colored and sometimes offensive, discolored to a green or yellowish green, and it stains, starches and agglutinates the handkerchief. In atrophic rhinitis, masses of foul smelling crusts are often expelled from the nostrils. And if the patient waves before you a sanious colored handkerchief—beware! Think of the matadore waving his flag in the arena, and look for malignant disease.

The prevalence of nasal catarrh then demands that we should know all that we can about it. There is also another reason, and it is one that the practitioner must always be prepared to combat among the laity and take care not to help to spread about, and that is that nasal catarrh is incurable. It is one of the fallacies that has a strong firm hold on the laity and even, strange to say, on many learned medical men, that chronic nasal catarrh is an incurable malady and must be endured throughout the patient's lifetime. It is truly remarkable how many medical men believe this to be true and do not hesitate to tell the patient that he must never expect to be cured. Now, this can only be explained by ignorance of the nature of the cause of nasal catarrh.

It is quite true that many cases of this malady are very difficult to cure, and no ordinary or even extraordinary therapeutical means will do so, since many such intractible nasal catarrhs are due to pus polypi in the maxillary antrum and frontal sinus keeping up a continual drenching of the nasal passages with mucus, pus and blood. With many patients nothing that the practitioner can do will cure, the only remedy being a surgical one, after which it takes about six months to effect a cure. But I want to emphatically emphasize the fact that the disease can be eradicated.

In examining a case, go carefully into the history and see if the nasal catarrh dates back to repeated attacks of influenza, the catarrh incident to this malady often extending to the antrum or other nasal sinuses, so becoming chronic.

The method of examination is an important consideration in the investigation of the causes of nasal catarrh. First, note the shape of the nose, as those with long and high noses and consequently, narrow nasal cavities, are more likely to

suffer from intractible catarrh than those whose noses are broader and lower, with a wider interior.

The mouth should always be carefully examined, and it is remarkable how ofter this is overlooked in practice in relation to nasal discharges. In many cases pyorrhoea alveolaris and carious teeth are found to be present. The septic mouth induces a septic pharyngitis, and this brings on a purulent rhinitis, and so the nasal discharge is kept going from constant reinfection from the mouth.

The tonsils should be examined for, when enlarged, especially if follicular with open spaces readily accumulating inspissated septic material, they are a fertile source of nasal sepsis, and this keeps up a nasal catarrh. The nasal pharynx should always be examined with a retro-pharyngeal mirror. Adenoids in the nasal pharynx, by becoming periodically septic, will maintain a discharge from the nose.

Lest we forget, let me impress the necessity of making an examination of the ears in all cases. It is remarkable, but no less a fact, that a discharge from the middle ear may cause and account for the continuance of a nasal catarrh, the ear discharge being precipitated down the eustachian tubes and so into the nasal pharynx and nose.

We have heard a great deal from time to time with reference to the nose infecting the ear, and it is well recognized that such extension of nasal sepsis is not unusual. The ear may, and does, infect the nose, and the fact that aural discharges are liable to be precipitated down the eustachian tubes and into the nasal passages, setting up purulent rhinitis and sinus diseases, has not been sufficiently considered as a direct cause of such trouble.

There is little doubt but that much of the danger of such septic irrigation descending from the upper pharyngeal region and from the middle ear by way of the eustachian tubes is prevented by the active function of the tonsil. In these structures bacterial changes are constantly carried on, and from them auto-vaccination proceeds by which the patient is protected by the organism of this pus escaping down from the septic middle ear. It is imperative, therefore, to ever keep the likelihood of aural sources of infection in mind, and to scrutinize these cavities carefully, otherwise a sure source of sepsis may easily be overlooked.

The method of examination is an important consideration in the investigation of the causes of nasal catarrh. It is a great mistake, and even likely to lead one astray in diagnosis, to put a speculum straightway into the nostrils and so attempt to elucidate the cause of a chronic discharge. I would lay stress upon the value in making inquiries into nasal cases by commencing with the outside by palpation and inspection of the groups of cervical lymphatic glands.

One of the most intractible cases of purulent rhinitis that I have seen was that of a person who came to the clinic complaining of pain and swelling in the sublingual and sub-maxillary regions, and these lymphatics were found to be acutely inflamed. The cause was a septic discharge from the nose with ulceration in the vestibule which was found partially occluded with accumulated sanious crusts.

The lymphatics from the anterior half of the nasal cavity follow the line of the facial veins and run to the glands in the sub-maxillary and sub-lingual regions, while those of the posterior half trace backward to the tonsils and from there they empty into the superior deep carotid group of lymphatics. Hence, the importance of palpating those regions before inspecting the nasal interior.

In seeking the causes of a nasal catarrh, the nasal chambers should always be examined first by way of the mouth and the naso-pharynx by the posterior opening of the nose. The patient bears the retro-pharyngeal examination much better if it is carried out early than if it is done at the end of the inspection. Valuable information is often gained with reference to the case by a careful inspection of the pharynx and naso-pharynx by means of the retro-pharyngeal mirror.

Many people have asked the question, "Why are some people more subject to colds in the head, that is, attacks of acute rhinitis, than others?" One or two members of a family are often contracting colds while the others escape. Some members of an office staff are always falling victims, and others almost never have a cold.

There are two explanations. First, the person's unhealthy habits or unhealthy surroundings or his breathing a damp, musty smelling, foul or dusty atmosphere, air that, owing to insufficient ventilation, has not been removed; and, secondly, abnormal anatomical conditions in the nasal cavity. In my experience and opinion, the latter is the more common and potent as a determining cause of recurrent head colds and nasal catarrh. An individual with a normal nasal interior, breathing an unpure atmosphere, is less liable to become affected than one with a disturbed interior and breathing a purer atmosphere.

To determine the causes of catarrh, therefore, it is imperative to get a good view of the inside of the nose so that departures from the normal may be carefully observed. Although it should be safe to assume that practitioners are generally acquainted with the appearance of the interior of a normal nose, I may say that I have found among practitioners a remarkable deficiency in their knowledge on this subject. A description of a normal inferior turbinal is seldom correctly given. A mental picture of the appearance of a normal tympanic membrane, larynx or retina is usually acquired and retained and can be readily given, but that of a normal nose rarely. The inferior turbinal may be taken as the criterion of a healthy nose and may be used as a correct standard to go by in the study of departures from the normal.

The two entrances to the nose should be symmetrical and sufficiently patent to allow free ingress of air on both sides. This is of the greatest consequence, since any obstruction at the entrance to the passages, such as collapse of the alar cartilages or dislocation of the columnar cartilages into the entrance, by lessening the volume of the air current, directly leads to congestion and ac-

cumulation of discharges, consequently causing nasal catarrh. If these seemingly simple and visible defects are not remedied, it avails but little to perform some skillful operation on the nasal interior for the removal of nasal catarrh as it will invariably be a failure.

The nasal septum should be straight, but it seldom is, although slight departures from the normal are of little consequence as a reason for nasal catarrh.

The inferior turbinals are easily visible in tilting the tip of the nose with the thumb. They are rosy, red, rotund, resilient and moist, and a free passage can be seen between their most prominent parts and the septum. The common departures from the normal, as seen best in these turbinals, consist either in accumulations or the contrary of these healthy conditions.

In chronic rhinitis the inferior turbinals are too rosy red, too rotund, too resilient, and secrete too much mucous discharge, and the nasal passages are diminished and partially blocked, especially on lying down. In hypertrophic rhinitis the turbinals are enlarged but more firm in their consistency, less red and resilient, but still they over-secrete.

In atrophic rhinitis, the turbinals are non-existent of very small and usually covered wth septic crusts.

The middle turbinal in the normal nose is usually easily to be seen on tilting the head a little backwards and is found to be rosy, red, uniform, smooth and moist. The floor of the nose can be readily inspected from the front and is seen to be straight and concaved, and should not contain any discharge. Sometimes the lower half of the nasal cavity is normal, but the upper half in the region of the middle turbinal is abnormal and keeps up a catarrh.

Mucous polypi are one of the most common causes of a persistent nasal catarrh. They are at first very small and nearly always spring from the region of the middle turbinals and hang free into the middle meatus. They also often start on the lips of the hiatus semi-lunaris on the outer wall where the mucous membrane is rather loose and easily becomes congested and oedematous. The discharge is of a watery character and until the polypi cause blocking of the middle meatus, this may be all that the patient complains of except that they say that changes of weather affect them; dry weather favorably and wet the reverse, as regards the amount of stoppage and discharge.

The discharges that I have been considering have been derived from the general surface of the mucous membrane, but should the discharge be mostly purulent there is a great likelihood that it may come from one or more of the accessory sinuses, and that a thorough examination of these should be made to eliminate any such local infection.

The outflow from the sinuses takes place either anteriorly or posteriorly, and this becomes a common cause of anterior or posterior nasal catarrh. All of the sinuses, the antrum, frontal, sphenoidal and anterior and posterior ethmoid cells are liable to acute and chronic catarrh. The acute inflammation is the most usual forerunner of the chronic.

In acute antral and frontal sinus sepsis there is a more or less profuse yellow purulent discharge from the nose anteriorly with pain in the cheek and eye, and a throbbing, full, aching and more or less bursting sensation of varying severity. Should the frontal sinus be so affected, these painful feelings will be felt mostly over the forehead, in the orbit and at the inner canthus, and the discharge will be lasting for longer periods throughout the day, as distinguished from that from the maxillary antrum, where it is a morning discharge, generally clearing off as the day advances.

In acute frontal sinus sepsis there is often swelling, usually over the inner canthus and extending outwards over the eye and forehead, whereas, in acute maxillary antritis, the swelling appears below the outer canthus and advances inwards.

The presence of pain and throbbing in the neighborhood of a sinus, therefore, with associated discharge from the nose, ought always to be given strict attention and demands urgent treatment so as to avoid the case drifting into the chronic category.

Acute catarrh of the posterior ethmoid cells and sphenoidal sinus usually are accompanied with deep-seated throbbing headaches and more or less yellow discharge down the back of the pharynx, producing retro-pharyngeal catarrh.

Nasal catarrh, generally with a fetor and a thick yellow discharge, is what nearly all patients suffering from chronic antral disease complain about. On examination pus is seen on the floor of the nose and can generally also be detected running over the inferior turbinals and under the middle turbinals. If this discharge is wiped away and the patient's head lowered and inclined to the opposite side for ten minutes so that the affected antrum is uppermost, on raising the head and examining again, pus is usually to be found again in these positions.

Transillumination will show the maxillary antrum to be dark on the side involved, and if the inner wall of the antrum be punctured with a small trocar and cannula, pus can be blown and washed out which, of course, is proof positive of septic antritis.

Chronic frontal sinusitis manifests itself also by catarrh. The discharge is more or less a continuous one, going on throughout the day and will not, as in the case of the antrum, appear chiefly in the morning. If the nasal cavity be examined the discharge will be found in the anterior and upper parts of the nose, coming down outside the middle turbinals and tracking over the inferior downwards to the floor. If these fluids are wiped away and the posterior half of the middle meatus packed with cotton wool so as to shut off the ostium leading to the maxillary antrum, the discharges will be observed to accumulate again without displacing the cotton.

Should the catarrh flow backwards, constituting a post-nasal catarrh, the posterior groups of accessory cells are often involved in disease, and the pus can be seen on the posterior pharyngeal wall, and by means of the retro-pharyngeal mirror can be traced flowing over the posterior ends of the middle and inferior turbinals.

In nasal catarrh should the discharge be sanious, it might be due to the simplest of causes, such as a foreign body in the inferior meatus, especially if unilateral and in a child.

In an adult there might be present a small ulcer at the seat of election for epistasis, at the junction of the skin with mucous membrane.

Blood in the discharge, however, if unilateral and in an adult, especially if accompanied with progressive nasal obstruction, might be due to malignant disease and be of serious import.

TREATMENT

The treatment of nasal catarrh obviously depends upon the cause. It is therefore imperative to ascertain its source.

There are common rules which apply to the treatment of all nasal discharges, and they should be on no account overlooked.

It seems to be almost instinctive in the medical mind to start the treatment of nasal discharges by ordering syringes, and I am particularly desirous of giving warnings against the danger of such measures. Never for any reason should a large or powerful syringe be employed for the purpose of syringing the nose. I have seen many disastrous consequences follow such treatment, and I want to add a word of caution against the employment of the syphon syringe, which in my experience is equally reprehensible, the discharge being likely to be driven back into the posterior and upper regions of the nasal cavity and into the naso-pharynx, and so may easily invade the accessory sinuses or the middle ear.

To syringe is simply to fight against Nature's endeavor to get rid of the discharge by the anterior route. It is surprising how little clearance of mucous and muco-pus takes place on even forcible syringing. If mucous or muco-pus is allowed to become somewhat dry, as it does in the nose, it is almost impossible to wash it away by syringing, thus emphasizing the futility of trying to clean nasal passages in this way.

I would condemn all syringing of the nose; the utmost that should be done, being to use a coarse spray containing a warm alkaline solution which may be sniffed up frequently as the spraying is being carried out.

A sniffing nasal douche may be used or a warm soothing alkaline lotion might be sniffed into the nostrils from the palm of the hand with safety and advantage. Nothing more forcible than a gentle sniff of such liquid into the nose is warrantable.

When the desire is only to clean and moisten the nasal passages, the following prescription makes one of the best lotions:

Rx.	Sodium Chloride	Gr. XXXXV
	Sodium Salicylate	" XXXXV
	Sodium Borate	" LXXXX
	Potassium Chlorate	" LXXXX
	Glycerine	Drachm
	Water	6 Oz.

Directions: Two teaspoonfuls added to one ounce of warm water and used to spray or sniff up nostrils occasionally.

CHAIRMAN'S ADDRESS.*
ADVANCE IN BUSINESS METHODS.

By P. A. JORDAN, M. D., Eye and Ear Sec., San Jose

Thirteen months have rolled by since last we met in these beautiful grounds. I have keenly felt the honor of being chosen your chairman for the past year, and my secretary and myself wish to express our thanks for your loyal support.

The program about to be enjoyed speaks both for our work in arranging it, and your excellent thought in producing it.

We are living in an age of greatly advanced medicine and surgery, and have a greater responsibility imposed upon us. Instead of treating disease by the old puttering methods we at once attempt to remove the infective foci which so often causes the malady which we are asked to cure.

We formerly treated long and patiently cases of iritis without thinking of, or discovering carious teeth or infected tonsils or luetic blood which was causing the trouble. Today iritis immediately makes us think of an infected focus which, when remedied, allows the diseased iris to at once clear up. Cataracts were removed in the presence of carious teeth, which act now would be considered little less than criminal. Catarrhal conditions were treated with pink sprays and costly atomizers, whereas now a sub-mucuous resection or suitable turbinotomies relieves the catarrhal condition at once.

Chronic otitis media, we believe, will be much less in the growing generation of children than formerly, due to the growing custom of the careful enucleation of tonsils and adenoids.

The great advance in the science of our specialty has caused a tendency on the part of many of our fellows to attempt an improvement in the business methods of their own respective offices. There is no more excuse for lax business methods in our offices than there is excuse for poorly made diagnoses or carelessly administered treatments. Our patients, unfortunately, have been trained in past generations to consider the doctor as a man having no business methods, and this is, unfortunately, largely true.

The speaker would recommend that at the first visit of each patient he be given a most thorough examination which leads as nearly to a diagnosis as possible; that he be inspired with the greatest amount of confidence in his examiner by having explained to him, in terms suitable, the degree of gravity of his trouble. He likes this explanation. He has come to find out something about himself, and he is pleased to have you take time to tell him about it. Then he should be taken to the business desk and asked to make a deposit covering the cost of his first visit, and also be given an explanation of what each succeeding visit may cost; or, if it is an operation needed,—the reasons for same should be carefully explained, and when he asks how much it will cost the answer may at once be given, "We will

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

talk the matter over and see what this should cost you in your present financial condition." He is then told the usual price of such a surgical procedure. He is asked the amount of his income and also of his expense, and the price is arranged so that he can readily afford this expenditure without any financial embarrassment. This makes him an immediate friend of the doctor. He pays for this operation in advance and feels then he has an investment. He is not worried about a bill, the size of which he does not yet know.

This course immediately eliminates the professional dead-beat. Having eliminated the man who plans not to pay, the physician has saved his time, strength and the cash outlay which this causes. This careful business planning does not replace or decrease professional zeal, but on the contrary increases the same. It allows more time for the care of worthy patients, more time for study, recreation and post graduate courses, and incidentally affords more financial remuneration for such pursuits. It does not pauperize any one; it places medical care within the financial reach of all, because no patient need go away because he is poor. His financial condition is discussed openly and freely with him at the first sitting, and instead of his being frightened away by a cold statement that he will have to pay a large amount, he is made to feel that the physician is interested in him to such an extent that he will do for him entirely careful scientific work for as small a fee as the patient feels is just.

Cash should always accompany the work with the same promptness as each individual patient pays his rent, food and store bills. This plan affords a daily cash income to the office and does away with almost all monthly bills, and has, in my experience, practically eliminated the use of the collector. It has removed from my office the professional dead-beat who, in former years, came in flocks, and at the same time it has made no enemies, but has made many warmer friendships.

I wish here to refer to a criticism in the February 1920 California State Medical Journal. Permit me to read a portion of this article:

"To the Editor:

An article appears in your issue of January, 1920, that seems to me to present a wrong point of view regarding the attitude of the physician toward his work; and while this point of view may appeal to a few members of the profession, I can not believe that it does to the great majority. The fault with the article is that *it assumes the primary object of the physician to be the accumulation of money, and that his dealings with patients should be conducted always with this object in view.* But on the contrary, from time immemorial, medicine has been considered one of the great callings or professions, into which men enter because actuated by motives higher than those that prompt the adoption of a mercantile pursuit. It has been handed down by our fathers in medicine and it is as true today as it ever was, that the first and highest motive of the physician is service; that his constant desire, inspiring all his daily work, must be the relief of suffering and distress, as he has been trained to do; and to do it for the sake of doing it, not for what it wil bring him in dollars and cents. To be sure, he expects and must have a fair return for his service; but he must not make this his first thought or he lowers a great profession to the level of a sordid business."

It is this criticism which has inspired my address on this subject today. It entirely misstates my view on this subject, and I vigorously resent the implication that the physician's first thought, in dealing with his patients, is primarily for financial gain; but I as earnestly assert that all physicians I have ever known fully expect a fair remuneration for their services, sufficient to afford a comfortable livlihood, and with the hope of saving enough funds during the harvest time of life to provide for a warm hearth when life's winter snows begin to fall. It is my belief that 90% or more of all men and women entering the medical schools have taken up the work with the hope of making a living, in view. If this last statement be true, why should we hesitate to put our offices in order, treat our patients in a business-like way and collect from them what they honorably and honestly should pay for services rendered? Why procrastinate in presenting our claims?

The author of this criticism quotes our Savior, and says "Man does not live by bread alone." Our Savior also said, "The servant is worthy of his hire," and I am sure that he wishes us to do our work in a tidy manner.

Your speaker possesses high ideals in the pursuit of his profession. He will gladly compare his free charity work among patients and will also compare his cash charity gifts with those of the critic above mentioned. He loves his work for the work's sake; for the good he is able to do patients, both rich and poor, and he has found by experience of the last few years that treating all classes of patients in a deserving business-like manner has incidentally been profitable in this world's goods.

I hope to see in the near future a chair of instruction along business lines installed in each medical school in our country.

Book Reviews

Diseases of the Intestines and Lower Alimentary Tract. By Anthony Bassler. 660 pages. Illustrated. Philadelphia: F. A. Davis Company. 1920. Price, $7.00.

The author has, with marked attention to detail, written his personal views upon intestinal diseases. He readily quotes the opinions of other writers and in this manner brings the work quite up to date. Yet the author does not hesitate to state clearly when his opinion differs from the other authorities.

A large portion of the volume is devoted to anatomy, physiology and examinations, great detail being given to various laboratory tests, some of which could have been omitted.

A good portion of the book is devoted to Intestinal Toxemia. In fact this subject pervades the whole volume and is used to explain many conditions. The method of bacterial study of the

stool for diagnosis is of interest but far from convincing. The suggested therapy through vaccines, for the intestinal toxemia, seems not above question in view of the recent evidence of the effect of diet on intestinal contents.

Although a great deal of material in this volume is carried over from a former generation, which could be safely omitted, the book is a step in advance, especially as seen in some of the diet lists, and contains facts that are of interest and value to all. The impression is that the new material could have been gathered into a much smaller volume thus making it more valuable and decidedly less expensive. E. J. B.

Advanced Lessons in Practical Physiology for Students and Practitioners of Medicine. By Russell Burton-Opitz, M. D., Ph. D., Associate Professor of Physiology, Columbia University, New York City. Octavo of 238 pages with 123 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $4 net.

This volume is really the laboratory companion to Burton-Opitz's text-book of physiology. The primal requisite of any laboratory guide is clarity, and this particular note characterizes the volume throughout.

Without being verbose and over technical, each step in the preparation of an experiment is concisely set forth, and in such a manner as to develop in the student that mental attitude which is essential to the proper observation of facts, and inductive correlation of these facts once they are obtained.

The experiments given to exemplify the fundamental principles of respiration and circulation are particularly well selected, as is also the treatment of physiology of the nervous system.

In format the book is well done. Throughout the volume blank pages are inserted so that the student may annote for himself and put down such data as he deems desirable. Altogether, it is one of the best laboratory manuals that we know of and should receive a well-merited recognition.

R. A. Y.

Physiology and Biochemistry in Modern Medicine. By J. J. R. Macleod. 3d ed. 992 pages. Illustrated. St. Louis: C. V. Mosby Company, 1920.

The appearance of the third edition of Macleod's work confirms the already favorable reception, which has been given the book. The growing tendency of medical schools to teach the laboratory courses, with an under-emphasis of the clinical courses, and the lack of proper laboratory training in the older medical schools, has created a definite call—the answer to which is supplied by the author's work.

This volume bridges the chasm between the purely academic sciences, and the practical problems of medicine as found by the practitioner in his every-day work. The newer methods of diagnosis and treatment are continually demanding from the practitioner a well-rounded scientific balance, and it is only by a thorough knowledge of the fundamental principles of biochemistry and physiology that he can justly apply to himself the term "a scientific practitioner." It is by correlatin these two factors that the book finds its justification.

Considerable new matter has been added to the third edition, there has been an extensive revision of the section on neurology by Dr. A. C. Redfield. The chapter on respiration is particularly complete and brings the material up to and inclusive of the newer work of Henderson and Haldane. The chapter dealing with the endocrine organs is particularly well written, the experimental evidence is conservatively epitomized, and the gradual drift toward the clinical application of the knowledge thus gleaned is judiciously pointed out. Typographically and structurally, the volume maintains the high standards that have always been set by Mosby's books. The illustrations are profuse and helpful, the tables, whenever given, are accurately compiled. All in all, the volume is one of the most useful and valuable that a physician can acquire, and no well-balanced working library can afford to be without it.

R. A. Y.

An Epitome of Hydrotherapy, for Physicians, Architects and Nurses. By Simon Baruch, M. D., LL. D., Consulting Physician to Knickerbocker and Montefiori Hospitals, Consulting Hydrotherapeutist to Bellevue Hospital, New York City, Formerly Professor of Hydrotherapy, College of Physicians and Surgeons, Columbia University. 12mo of 205 pages, illustrated. Philadelphia and London: 1920. W. B. Saunders Company. Cloth, $2.00 net.

The prominence of the author on hydro-therapeutic matters brings this volume to the fore as the most up-to-date ready reference manual obtainable. The physician who wishes to prescribe hydriatic treatments finds much usuable knowledge. The operator who would give these treatments most efficiently will benefit by careful study of the methods therein described. Persons planning or installing hydrotherapeutic equipment will make fewer blunders in first consulting the chapters on the construction and arrangement of this complex and expensive apparatus. H. L. L.

Correspondence

WE HEARTILY AGREE

January 21, 1921.

To the Editor:

1. We regret the fact that you were unable to accept the article sent to you for publication in the State Journal because, as you inform us, it would take at least a year or more for its publication.

2. It is rather lamentable that those desirous of publishing papers after working on some point of interest that would be of benefit to readers of the Journal should be prevented from doing so because of the extreme limitation of space in the State Journal.

3. Cannot some means be found or devised, such as subscription or the like, to make it possible for the Journal to be at least double its size? This is the only fault that we find with our Journal, which, otherwise, as we know for a fact, is highly considered in the East.

4. Appreciating your attention to this letter and trusting you will take this matter up with the editing committee in order to remedy such a deplorable defect.

Yours very truly,

JAMES EAVES, M.D.
PAUL CAMPICHE, M.D.

560 Sutter Street, San Francisco.

VENEREAL DISEASE CONTROL

Los Angeles, Dec. 21, 1920.

To the Editor:

In your November 1920 issue you have a very excellent article from a scientific technical viewpoint upon, "Status of Venereal Disease Control" (page 399).

There is no question at all about venereal disease being absolutely preventable. Perhaps this question is a good deal like the little doggie braying at the moon; our efforts will be futile, but since we have such excellent prophylactics, why not tell the public about them and **use** them? After all is said and done, and "Fit to Fight" pictures have been shown and no stone left unturned, the people seem to choose to keep on in the same old way. We can't forget what some of our dear old "Profs." used to say about the sexual instinct being next to the first great law of Nature, that of "self-preservation," and that

sometimes the former even superseded the latter. Whether married or not, everyone is entitled to protection, and they are certainly getting little or none under the way we are instructing now. We protect ourselves against smallpox, diphtheria, typhoid fever, pneumonia, et al.; **why not this?** We know how. It would seem that the Army system would be better, so that the "gonococcic count," would "take the lethal count," for good and all time.

Had it not been for your northern part of the state, showing some real honest-to-goodness, devil's intestinal equipment (vulgarly known as "guts"), and some pure 100 per cent. Americanism we would today be living and laboring under the siren song of the "Quack Quartet"; the majority of the "nuts" seems to be down here. Our little standing made-up joke was, "What stands on eight legs and howls like Balaam's Ass?" **The Quack Quartet.**

The only reason in the wide world that we resurrect the quartet which we have so happily buried, is the fact that if any anybody should mention to the "enemy" with what "acme of asininity" we have tackled this venereal question (which is **not** a question, with proper prophylaxis), we are going to have an addition to the "quartet," and they will ring in the venereal measure and then we will have to fight the "Quack Quintet."

In closing, the writer is under the impression that this venereal question is only a matter of education, but in that education, is there any legitimate reason why people are not instructed to take care of themselves. We use prophylaxis in everything else, why not **that?** If we, as medical men, think so much of preventive medicine, and would make sound citizens for the next war, or for peace, let us cease being hypocrites, and recognize the fact that people will **do it,** and tell them how to play safe.

Cordially and sincerely yours,

FRANK A. WOODWARD, M. D.

2488½ W. Pico, Los Angeles, U. S. A.

County Societies

ALAMEDA COUNTY ITEMS

The regular monthly meeting of the Alameda County Society was held at the Health Center Monday evening, December 20th. This was the annual election of officers, and the following were elected to office: President, Dr. Alvin Powell; Vice-President, Dr. Elmer Brinkerhoff; Secretary-Treasurer, Dr. Pauline Nusbaumer.

Upon retiring from the office of president, an interesting address was made by Dr. Clarence Page.

Dr. Dudley Smith, president of the League for the Conservation of Public Health, in token of their high esteem for him personally, and as a mark of their appreciation of his noble efforts for the advancement of public health, was presented with a gold watch bearing an appropriate inscription. Although taken by surprise, Dr. Smith, in his usual happy way, rose to the occasion and again impressed upon his conferes the genuine pleasure he had taken in his past year's work and fired his listeners with new zeal for service that seeks the advancement of the public good.

An interesting scientific program was presented by the Program Committee, consisting of Drs. C. W. Page, Alvin Powell and Pauline Nusbaumer. A paper, "Experimental Studies on the Mechanism of Gall Bladder Infection," was read by Dr. Karl Meyer, professor of Graphical Medicine, University of California. This proved to be one of the most highly instructive and thoroughly scientific papers read before the Society in a long time, and was received and discussed with the keenest appreciation.

On December 6th, the regular monthly meeting of the staff of Samuel Merritt Hospital was held at the hospital. A valuable paper, "The X-Ray Aspect of Bone Disease," was read by Dr. Lloyd Bryan, of San Francisco. Of an intensely interesting character, this paper was ably discussed by Drs. Siefert and George Rothganger.

Dr. Siefert also reported, in some detail, a somewhat unique case of foreign body in the eye, illustrated by excellent X-Ray plates.

The scientific meeting was followed by refreshments and a social hour of goodfellowship.

On December 10th, the regular monthly meeting of the Visiting and Resident Staffs of the Alameda County Hospital was held at the Health Center. The past month's activities at the hospital were discussed and the routine subjected to a critical analysis. Due to the consistent efforts of the staff in conjuction with Dr. Broderick, the hospital records and other essentials have been brought into conformity with the standards required by the American College of Surgeons.

CONTRA COSTA COUNTY

The annual meeting of the Contra Costa County Society was held in Richmond Wednesday evening, December 29, 1920. A large number of members and visitors were in attendance.

The annual report of the Secretary-Treasurer was read and accepted.

The incumbent officers, President G. M. O'Malley, Vice-President M. L. Fernandez, Secretary-Treasurer C. T. Wetmore, were re-elected for the ensuing year.

The speaker of the evening was Dr. Max Rothschild who imparted to the society some exceedingly interesting information which he had acquired in his recent studies abroad with Moch and Denycke in the treatment of tuberculosis with partial antigens. The subject of immunity was reviewed and an interesting account of how the partigens are manufactured, their clinial use in determining the degree of immunity of an individual and finally by lantern slides illustrating the results of treatment in several different kinds of cases. A general discussion followed.

Before adjourning a luncheon was served.

FRESNO COUNTY

The following officers were elected for the ensuing year: President, J. R. Walker; First Vice-President, J. D. Morgan; Second Vice-President, Carl Matthewson; Secretary, A. D. Ellsworth; Assistant Secretary, G. L. Long; Treasurer, Union National Bank. To the Board of Governors (including holdovers)—Drs. Willson, Trowbridge, McConnell, Cooey, Miller. Delegates to the State Society meeting (including one holdover)—Drs. Rosson, Craycroft, Ransome, Schottstaedt, Cross, J. R. Walker. Alternates—Drs. Anderson, Hare, Collins, Luckie, Willson and Madden. Dr. G. L. Long was appointed associate editor. Routine business was transacted.

LOS ANGELES COUNTY

Los Angeles County Medical Association Meeting

The regular scientific meeting of the Society took place December 2, 1920, at 8 p. m. in the Friday Morning Club House.

Dr. Rae Smith called the meeting to order.

Dr. Thomas C. Myers moved the adoption of resolutions anent the amendments to the by-laws, which would prevent members of the panel of the State Insurance Fund from being members of the Los Angeles County Medical Society. The resolutions were overwhelmingly defeated. Hon. John P. Carter, collector of internal revenue for this

district, then addressed the Society in regard to narcotic addict clinics.

The last annual monthly meeting of the L. A. County Medical Association at the Friday Morning Club Rooms, 8 P. M., December 16th.

Dr. Rae Smith, the president, presided. Dr. Mattison read the report of the Milk Commission, mentioning the Arden, Adohr, and the Cold Spring Dairies as the only ones certified.

The address of the retiring president, Dr. Rae Smith, gave a résume of last year's work, organized medicine, the help of the secretary, the nurses' directory, and other topics of interest. Dr. Harlan Shoemaker, the secretary-treasurer, gave an exhaustive report upon work. The auditing, advertising, the Bulletin, fees, rebates, expenses of printing, rent, etc., the programs, the telephone exchange, the library and permanent quarters were other subjects of his report.

Dr. William Wenzlick read the report of the Ethical Committee, the committee on Necrology and of the County Editor as associate of the State Journal of Medicine.

Dr. William Duffield reported the work of the Campaign Committee.

Dr. Browning read a report on Health Insurance and thought the profession should be interested, although the majority are opposed to it as a state function and that in California an amendment to the State Constitution would be necessary to enact such a measure.

Dr. Norton, on Outpatient Departments, reported and stated among other things that the amount of work done was almost beyond belief, and that a debt of gratitude is due to the Council.

Dr. McNeile, of the Board of Tellers, announced the result of the election.

Dr. McArthur escorted Dr. Walter V. Brem, the newly-elected president, to the chair.

Dr. Brem remarked that he appreciated the honor and the gracious letters from his colleagues and that there was no competition for the office, that we want to be more friendly and are glad to see other members honored. He expressed himself as feeling humble in accepting this position because it brings with it great responsibilities. Early in the summer it was by accident that he began to make political speeches and would have hesitated had he known what would come. He had made forty speeches during the campaign and he felt there was an inspiration although at first a dread. A great conflict is still before the profession. The profession must be solidified for this purpose. Education always lags behind advancing science. Half of our institutions were diploma factories turning out men not well versed, and we have still many with us though some have improved themselves. Now the requirements are two years' more of college work before students are admitted. Medical education is now within hailing distance of medical knowledge. There is more education necessary than in any other profession. Ours is not a school of medicine. Preventive medicine is the watchword. Curative medicine has saved thousands but preventive medicine has saved hundreds of thousands. It is a great profession for the control of disease; it is not a school. Dr. Shoemaker has emphasized a permanent building. It will add dignity to the profession. The committee on public health should have its function enlarged. The Chamber of Commerce has no committee on Public Health. There should be a committee to study industrial accident insurance, and there are many other subjects, but remember that we are under obligation to continue public health work because we have knowledge others have not. Having taken this stand we must go into it heart and soul and place on a higher plane the health officers and the Board of Health in order to raise the health of the community.

Dr. McArthur moved a vote of thanks to the retiring president, Dr. Rae Smith, which was unanimously carried.

The president called for the report of Dr. Powers' committee on narcotic clinics which was presented by Dr. Barrow.

District Attorney Woolwine Versus Eddyites

District Attorney Thomas Lee Woolwine wrote a letter to Dr. Rae Smith, the president of the Los Angeles County Medical Association, in which he asked the aid of the society in the enforcement of the statutes which provide that in case of any death occurring without medical attendance such death shall be referred to the coroner for his investigation and for the purpose of holding an inquest to ascertain the cause of death. It is unlawful for a physician to sign a death certificate unless he is in fact the actual attending physician and not merely a signer for accommodation. He, therefore, requests all members promptly to report to the District Attorney every violation of the law.

City Health Commissioner L. M. Powers was also asked by the District Attorney to co-operate in this matter, and so was Coroner Williams.

December 8, 1920, in a letter by the Council of the Los Angeles County Medical Association, it was resolved that the Council recognized these serious conditions to exist, and expressed its desire to co-operate with the District Attorney Woolwine.

Personals

Dr. Albert Soiland and wife left for the East December 8 to attend meetings of medical societies in Chicago and Kansas City. Dr. Soiland was elected president of the Radiological Society of North America in Chicago, December 17, 1920.

Dr. Norman Bridge was elected president of the Camp Fire Club of Los Angeles and Hunters Fraternity Camp which held its first annual banquet and election of officers at the Los Angeles Athletic Club. Dr. Edward D. Jones was elected first vice-president and acted as master of ceremonies and told about the purpose of the society, i. e., to foster and protect wild life, national forests, game and fish, to co-operate with museums, universities and scientific bodies interested in outdoor life.

Dr. Lulu Hunt Peters, formerly Chairman of the L. A. Public Health Service, returned December 25 from Albania where she labored with the Red Cross. She is now ready to join the drive of the European Children Relief Committee, and will offer her services to Mr. Hoover. Dr. Peters received the Skandenberg decoration from the Albanian government, and the St. Sava decoration from the Serbian state.

Sanitarium Zone Law

The Health and Sanitarium Committee of the City Council recommended the adoption of the ordinance establishing a zone in which all hospitals, asylums, sanitariums, home retreats or other places for the care and treatment of insane persons and persons of unsound mind or suffering from mental or nervous disease may be maintained. The Zone is to take in the territory between Figueroa street and Central avenue and Alameda street, Pico street and the Los Angeles river; also the area including the County Hospital and the Elysian Park district. This ordinance was adopted the following day. The idea is to keep these institutions out of the residence district.

Hospitals for Cripples

Ground was broken December 16 for the Orthopedic Hospital-School in Brockman Court extending from Hope to Flower streets, from Twenty-third to near West Adams street. The site was donated by John Brockman. Mrs. Anita Baldwin has contributed $50,000. Dr. C. L. Lowman started with four patients, there are now 655.

$10,000 Present for Barlow Sanitarium

The Optimist Club raised $10,000 which was presented to the Barlow Sanitarium for tubercu-

losis December 30, during an evening of "high jinks." This money is intended for a library building to be known as the "Optimists' Library Building."

Los Angeles County Hospital
December 1, 1920
Announcing the Opening of the Olive View Sanitarium for Tuberculosis

This new institution, which is being operated as a ward of this hospital, is now receiving as patients those adults having definite tuberculosis who are ambulant and who are in the early stages of the disease or who are in a condition that is considered favorable for early arrestment. It is expected that children will be admitted as soon as suitable accommodation can be provided. From the social standpoint its patients are those who are unable to pay for private sanitarium treatment and who are citizens of the United States and who have resided in Los Angeles County for one year immediately preceding application for admission. Advanced cases among indigents are cared for at this hospital as heretofore.

It is requested that every prospective patient for Olive View Sanitarium be given a letter addressed to the Superintendent, Los Angeles County Hospital, giving a concise account of the case to be presented in person at the Examining Room of the Hospital at 1100 Mission Road, at 9 a. m., on Mondays or Thursdays. At that time the necessary preliminary medical and social investigation will be started, and when completed, arrangements will be made for admission to Olive View if the applicant is found eligible.

By way of information it may be noted that the sanitarium is located four miles north of San Fernando among the foothills north of Sylmar at an altitude of 1500 feet. The buildings and equipment are new and first class in every particular and there are accommodations for one hundred patients who will be under the supervision of nurses and physicians especially trained in tuberculosis work. Dr. A. O. Sanders is the superintendent of the sanitarium.

While visitors to the institution are always welcome, it has been considered advisable in the interest of the patients themselves to ask those who wish to visit the patients to come only on Sundays and Wednesdays from three to five.

Mexican Drug Stores

J. P. Bustamante, a Mexican merchant, president of the Guadalupe Drug Company, incorporated recently, will establish a chain of drug stores in every city of Southern California. One store is located at 140 N. Main street; others will be established in San Bernardino, San Diego, El Centro, Pomona, etc., possibly also San Francisco. These stores will cater almost exclusively to the 100,000 Mexicans of Southern California.

SACRAMENTO COUNTY

The annual business meeting of the Sacramento Society for Medical Improvement was held at the Sacramento Hotel, December 22. Dr. George Briggs presided in the absence of Dr. Beattie.

The old constitution, under which the society had operated for many years, was changed in some minor respects to conform particularly to the new method of management of the Sacramento County Hospital, and the training of nurses in this section.

A committee of five to control these matters, with power to appoint a staff at the hospital and attend to the medical management, was elected by the society and consists of Drs. Briggs, Cox, Parkinson, Simmons, and Snyder, who will serve from one to five years. The new Board of Directors of the Medical Society consists of the following: Drs. Bramhall, Drysdale, Pearson, Rulison, and Turner. Delegates elected to the State Society are Drs. Cox, Foster, and James, with Drs. Cameron, Henderson and Jones as alternates.

The Society in the last year has gained ten new members by application and two by transfer, with one death; that of Dr. Kellogg. Total membership in the society now numbers eighty-nine. Dr. Wallace R. Briggs was admitted to membership at this meeting.

A committee was appointed to draft resolutions on the death of Dr. Andrew W. Hoisholt. The executive committee for the County Hospital was instructed to operate the hospital under the requirements advocated by the American College of Surgeons for an accredited hospital.

SAN DIEGO COUNTY

At its annual election in December the San Diego Medical Society elected the following officers for 1921: President, J. Perry Lewis, M. D.; Vice-President, M. C. Harding, M. D.; Secretary, George Worthington, M. D.; Treasurer, Martha Welpton, M. D.

The new council consists of Dr. Harding, chairman; Drs. Lewis, Worthington, Pickard, Hosmer, Wessels, Crabtree, Kinney and Churchill.

The Membership Committee—Dr. E. H. Crabtree, chairman; Dr. J. C. E. Neilson, and H. T. Woodward.

Program Committee—Dr. L. C. Kinney, chairman; Drs. C. M. Fox, J. F. Churchill.

Bulletin Committee—Dr. Robt. Pollock, Director-in-Chief, and to name his own staff.

Hospital Committee—Dr. T. F. Weir and T. C. Little.

Child Welfare—Dr. Marjorie Potter, chairman; Drs. Martha Welpton, I. D. Webster, A. E. Banks and C. W. Brown.

Medico-Legal Committee—Dr. W. W. Crawford, chairman; Drs. E. M. Fly and V. G. Clark.

At the annual meeting of the San Diego Medical Library Association, the following were elected for 1921: President, Dr. Robt. Pollock; Vice-President, Dr. H. P. Newman; Secretary, Dr. C. L. Stealey; Treasurer, Dr. H. N. Jackson. Directors—Drs. P. M. Carrington, Robert Pollock, O. G. Wicherski, R. J. Pickard, H. P. Newman, T. C. Little, H. A. Thompson, J. Weinberger, C. M. Fox, M. C. Harding, J. F. Churchill, Martha Welpton.

At the annual dinner of the Medical Society recently held at the San Diego Hotel, the guests of honor were Dr. and Mrs. Apple of El Centro, and Dr. Dudley Fulton of Los Angeles. Dr. Apple as its president represented Imperial Valley Medical Society carrying greetings to the San Diego Society and with a few felicitous remarks expressed himself as favoring frequent interchange between the adjacent counties. Dr. Fulton gave a delightful informal and thoroughly practical talk upon the functional derangements of the kidney, which brought forth quite a free discussion from those present.

In accordance with the hospital standardization the ethical physicians of San Diego recently met in the auditorium at St. Joseph's Hospital on the invitation of the Sisters, and organized themselves into a staff by the election of the following officers: President, Dr. B. J. O'Neill; Vice-President, M. C. Harding; Secretary, Dr. T. F. Weir, and an executive committee consisting of Drs. R. J. Pockard, Thos. O. Burger, C. E. Rees, H. A. Thompson.

The president, Dr. O'Neill, and the four members of the executive committee above mentioned constitute an executive body of five who will formulate rules and by-laws governing the medical staff of the hospital.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY

During the month of December, 1920, the following meetings were held:

Tuesday, December 7—Committee on Child Welfare

Informal papers and discussions. Organization of Committee.
of Committees.

Tuesday, December 14—Annual Meeting

1. Address of President.
2. Reports of Secretary, Librarian and Committees.
3. Election of Officers, Board of Directors, Delegates and Alternates.
4. Roentgen examination of the chest. W. E. Chamberlain.
5. The chemotherapeutic approach to the tuberculous process. E. L. Walker.
6. The partial antigens of Much-Deycke, their diagnostic and therapeutic value in tuberculosis. Max Rothschild.
7. Some aspects of the immunity problem in tuberculosis. K. F. Meyer.

Tuesday, December 21—Committee on Industrial Medicine

1. Relation of the Industrial Accident Commission to the medical profession. A. J. Pillsbury, Industrial Accident Commission.
2. Treatment of head injuries. C. L. Tranter.
3. The difficulties of X-Ray diagnosis of head injuries. H. E. Ruggles.

SAN JOAQUIN COUNTY

The annual meeting of the San Joaquin County Medical Society was held at the Chamber of Commerce quarters Friday evening, December 10th, President C. F. English presiding. Those present were: Drs. C. F. English, J. S. Cochrane, W. P. Lynch, L. Dozier, N. Barbour, F. S. Marnell, Grace McCoskey, N. E. Williamson, C. D. Hollinger, A. H. McLeish, R. T. McGurk, J. P. Martin, D. R. Powell, Dr. Hull of Stockton, Dr. Beck of Gridley and Dr. N. T. Enloe of Chico as guests.

The minutes of the previous meeting were read and approved. The following members were elected to serve as Board of Directors for 1921: Drs. J. D. Dameron, L. Dozier, C. F. English, C. D. Holliger, L. R. Johnson, R. T. McGurk, B. J. Powell, D. R. Powell, Hudson Smythe, and the officers chosen were: President, Dr. L. R. Johnson; First Vice-President, Dr. L. Dozier; Second Vice-President, Dr. C. D. Holliger; Secretary and Treasurer, Dr. D. R. Powell.

The speaker of the evening was Dr. N. T. Enloe of Chico who told of his method of immobilizing fractures in plaster paris some days prior to operating through a window in the cast. By this method he is enabled to use less foreign material in fixation of the fragment ends and his results have been highly satisfactory. After a general discussion in which Dr. Enloe answered numerous questions, the meeting adjourned.

SANTA CLARA COUNTY

At the regular annual meeting held for the purpose of electing officers, the following were chosen for the ensuing year: President, Raymond Wayland, San Jose; First Vice-President, Bert Loehr, San Jose; Second Vice-President, George Hall, Sunnyvale; Third Vice-President, Louis Boonshaft, Los Gatos; Secretary, J. L. Pritchard (re-elected), San Jose; Treasurer, H. C. Brown, San Jose. Councillors—T. L. Blanchard, C. W. Delaney, Albert Jayett, all of San Jose. Delegates—A. E. Osborne, Charles Richards, P. A. Jordan. Alternates—Raymond Wayland, T. L. Blanchard, and C. W. Delaney.

TWENTY-NINTH ANNUAL MEETING OF THE NORTHERN DISTRICT MEDICAL SOCIETY

The twenty-ninth annual meeting of the Northern District Medical Society was called to order November 16, 1920, at 11 a. m., at Hotel Sacramento, by Dr. Barnard, president.

Dr. J. W. James reviewed late work on the uterus showing the anatomy to be spiral muscles originating in the round ligaments and that the cervix was anatomically different from the uterus, calling the cervix the "Tonsil of the Pelvis." Dr. James criticised cautery, the usual applications, and surgery except complete removal of the mucous membranes. He recommended drainage by hot salt solution and the use of mercurochrome and radium. Discussion was general.

Dr. W. J. Hanna gave a history of vaccination and of the present crisis of smallpox. He advocated free vaccination and the forced vaccinatrol from the Secretary to a Board of Councillors; of quarantine. The paper brought much discussion; the older army men giving their experiences, but none could agree with Dr. Hanna's radical proposal of abolishment of quarantine.

Mr. Hartley F. Peart, general counsel to the State Medical Society, explained the aims and hopes of the State Medical Defense fund. The speaker gave a short history of the Medical Defense emphasizing the change of the control frmo the Secretary to a Board of Councillors; also stating that one private company had collected $35,000 in premiums in California in 1919. Mr. Peart assured all of a whole-hearted cooperation. Dr. Enloe spoke very highly of support given him by Mr. Peart in law suits, and Dr. Dameron stated that during the last few months he had changed from an active opponent to a supporter as he also had been so courteously treated and supported.

Dr. George J. Hall's paper reviewed the history of perineorrhaphy and discussed fully the later methods. On account of the shortening time discussion was omitted.

Dr. Leo Eloesser's paper on operative procedures on the lungs was illustrated by plates and by specimens from cases from his own clinic. As expected Dr. Eloesser's paper was not only thorough and excellent but was inspiring by the results in apparently hopeless conditions. His surgical fearlessness was as usual very modestly subordinated. The paper among other things called attention to lung abscesses of the upper lobes following tonsillectomy, and also to the advisability of doing two operations in central abscesses in case the pleura is free in order to save a hemothorax. Dr. Gundrum in discussion emphasized some of the excellent points of the paper.

Dr. G. Wilson gave a full exposition on bone syphilis and its differential diagnosis and showed a series of plates of a case in its various stages of same and Dr. Gundrum reported that he had seen the case in question and has diagnosed a tubercular hip.

Dr. N. T. Enloe reported his very original method of first applying a cast in all fractures and later doing an operation through a window in the cast. Photographs thrown on the screen illustrated the procedure. Dr. Dameron in discussion gave the thanks of the members for the showing of an original method.

A short business meeting followed, including the election of the following officers:

President, Dr. L. Dozier; First Vice-President, Dr. N. T. Enloe; Second Vice-President, Dr. J. O. Chiapella; Third Vice-President, Dr. J. D. Dameron; Secretary, Dr. J. Snyder; Treasurer, Dr. O. Stansbury. Board of Directors—Dr. J. Parkinson, Dr. Schoff, Dr. J. Dameron, Dr. G. J. Hall and Dr. F. Moulton.

New members elected: Dr. F. S. Marnell,

Stockton State Hospuital; Dr. W. H. Pope, Sacramento; Dr. Yates, Sacramento; Dr. N. Williamson, Stockton State Hospital.

Clinical Department

CASE HISTORIES FROM THE CHILDREN'S DEPARTMENT, UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL AND HOSPITALS

1921 Series, Case No. 2. March 14, 1916. Female. Spanish. Age 14 years. No. 10989. C. P.

Complaint—Hematuria.

Family History—Father died ten years previously of tuberculosis. Mother was working, her general condition was not good. She was thin and undernourished. One brother was well; four other brothers had died during infancy of causes which could not be definitely determined.

Past History—Patient had been full term, normal delivery infant and had been well until about two years of age when she had a fall, following which she had had frequent epistaxis. From that time she had been subject to frequent attacks of gastro-intestinal disturbances. At 11 years of age hematuria suddenly developed. During the past three years she had had attacks which lasted for periods of a few days or a week. She entered the hospital during an acute attack of hematuria which had lasted two weeks. Her catamenia had not begun.

Physical Examination—Showed a tall, thin, very anemic girl of 14 years. Skin was rather dry and hard and suggested ichthyosis (probably due to marked water loss from hemorrhages). She had numerous carious teeth. Tonsils were very cryptic and there was marked evidence in her lungs of glandular enlargement with definite signs at the right apex. There was also a moderate degree of adenopathy of all the small lymph nodes. The lower pole of the right kidney could be felt. The liver was slightly enlarged. Wassermann test was negative. Von Pirquet reaction gave a very definite reddened, slightly herpetic area 3x4 cm. In her urine tubercle bacilli were demonstrated and guinea pig inoculations were positive. There were no organisms grown on ordinary culture media. Phenolsulphonephthalein was found repeatedly as low as 10 per cent. in the first hour and 20 per cent. in the second hour and the appearance of the dye in the urine extended over a period of 72 to 96 hours. The urine constantly contained large quantities of pus together with blood. Cystoscopy revealed an inflamed granular mucosa indicative of old ulceration and the ureteral orifices could not be detected. The blood picture varied but little during the observation period of a month. It ranged between 45 and 50 per cent. hemoglobin. Red blood cells numbered from 3,500,000 to 4,000,000; white count from 11,000 to 15,500. The differential count showed marked increase in the neutrophiles which ranged from 56 to 78 per cent.; the lymphocytes ranged from 14 to 30 per cent., the large mononuclears and transitionals from 6.5 to 13 per cent. and eosinophiles from .5 to 3 per cent. Her temperature range was from 37 to 39° C. and usually oscillated between 38° C. and 39° C.

Diagnosis—Tuberculosis of the glandular system with involvement of the right apex.

Tuberculosis of the kidney and bladder.

Chronic tonsillitis and dental caries.

Typical secondary anemia due to tuberculosis and chronic hemorrhage.

Treatment—In a case such as this of generalized tuberculosis with involvement of the kidney, the problem always arises as to whether the kidney should be removed. This the mother refused to have done so that the only treatment remaining was that of clearing up her points of focal infection, removal of her tonsils and caring for her dental caries, all of which was done while she was in the hospital. The remaining treatment was that for generalized tuberculosis: complete rest in bed and a high calory diet, calories being mainly obtained by fats and carbohydrates as it would not have been advisable to put her on a high protein diet because of her kidney condition. The treatment recommended when she left the hospital was to move to the country and to have outdoor sanitarium treatment for her tuberculosis.

Prognosis—In such a case where there has been a long standing tuberculous infection with a kidney involvement and subacute involvement of the lungs, it is problematical whether she would recover.

Discussion—This case is interesting not only from the standpoint of tuberculosis but also because of her general nutritional condition. This depends a great deal on diet and hygiene, which might be counted on to raise her general resistance but there is also the problem of the marked secondary anemia. Whipple has shown that in anemia following repeated hemorrhages, which have continued for a long period, that the blood-forming organs only respond very slowly to dietetic treatment. The blood-forming organs constantly strike a lower level of blood production from which it is difficult to raise them. Unless the tuberculous process can be checked there is little hope of the dietary of hygienic treatment affecting her general nutrition as her hemorrhages will undoubtedly continue, which in itself acts in a vicious circle on her blood-forming tissues as a whole.

We feel that too little attention has been given to the part that the blood-forming organs play in such chronic infections as tuberculosis and syphilis.

Notices

STATE TAX

If you don't pay your State Tax of $2 to the Board of Medical Examiners your license to practice medicine in the State is automatically revoked. If you are not licensed to practice medicine, you cannot be a member of the Medical Society in good standing, and we will not protect you if you are sued for damages.

THE AMERICAN CONGRESS ON INTERNAL MEDICINE

The Fifth Annual Session of The American Congress on Internal Medicine will be held at Baltimore, Md., week of February 21-26, 1921.

The activities of The Congress will be largely clinical. Ward-walks, Laboratory Demonstrations and Group or Amphitheater Clinics will be conducted daily by members of the medical Faculties of The Johns Hopkins and The Maryland Universities.

STATE MEETING

Make your reservations at once direct with Hotel Coronado for meeting of State Medical Society, May 10, 11, 12.

Obituary

ANDREW W. HOISHOLT, M. D.,
San Francisco and Napa

A great loss was sustained by the medical profession of California by the death on December 17, 1920, of Dr. A. W. Hoisholt. Dr. Hoisholt was born in Copenhagen 62 years ago, but came here with his family as a boy and has received his education and has done his work in California. He graduated from Cooper Medical College in 1882 and then went to Europe and took a degree in the University of Heidelberg in 1889. He returned to California to take a place on the staff of Stockton State hospital, which he filled for many years. He left Stockton in 1912 to become superintendent of Napa State Hospital, and this position he held at the time of his death.

Dr. Hoisholt takes rank as the foremost psychiatrist who has been developed on the Pacific Coast. While a member of the staff at Stockton he became known for his scientific and progressive outlook on his chosen field and later as superintendent at Napa he made many improvements in the administration and in the plant itself which will long survive him. He introduced a system of case histories at Napa far in advance of those found in most state hospitals and which compares favorably with those found in large clinic hospitals. Because of his insistence that the insane were patients and not culprits his administration was characterized by a extraordinary degree of gentleness and humanity.

He made valuable contributions to the scientific as well as to the administrative side of psychiatry, particularly in the matter of the collection of statistical data of great medical and social interest and more particularly by his translations of foreign writers. His translation of Dr. August Winner's "Psychiatric - Neurologic Examination Methods" was the most recent of these.

In addition to his work as a psychiatrist he has always been an important figure in medical education on the Pacific Coast. While at Stockton he taught physiology at Cooper Medical school and the scientific course he gave, far in advance of anything previously given here, is still remembered by many California doctors. He made two further important contributions to medical education. One of these was his service as professor of psychiatry in Stanford Medical School since its foundation. The other was the establishment, in close co-operation with Dr. Wilbur, of the arrangement whereby internes may spend part of their rotating services in State hospitals. This has resulted in giving each year a group of medical men real experience in and knowledge of psychiatry, a subject concerning which in the past physicians have been lamentably ignorant. This idea will be perpetuated and is being copied in other parts of the country.

His close friends knew Dr. Hoisholt as a man of extraordinary culture and charm. He was a skillful and educated musician. A stringed quartet which he organized at Stockton achieved more than a local reputation and some former members of it are now nationally known. He was a critic and lover of art. His collections of orchids and of coins are among the best known on the coast. He had a thorough botanical knowledge of California plants. His familiarity with English and with Scandinavian literature made him always a delightful conversationalist. The hospitality displayed by him and by Mrs. Hoisholt will be long remembered by those who have enjoyed it.

The passing of such a man as Dr. Hoisholt leaves a gap not easily filled in professional and educational circles in this state, and among his many close friends there remains a sense of distinct personal loss. H. G. M.

New Members

Dunlap, Albert K., Sacramento; Christman, Paul, Sacramento; Thomas, Bert S., Sacramento; Pope, Wm. H., Sacramento; Gould, A. R., San Francisco; Zaiser, Albert C., Santa Ana; Hagan, Ralph, Los Angeles; Bryan, Eugene H., Loomis; Trimble, Harold G., Weimar; Carter, J. M., Livermore; Kraft, R. W., Oakland; Nutting, Raymond J., Oakland; Brenaman, Joseph T., El Cerrito; Furlong, Robert M., San Francisco; Boris, Herman S., San Francisco; Ottinger, M. R., San Francisco; Barnett, Geo. De F., Palo Alto; Wherry, Curtis A., Oakland; De Witt, J. Wallace, Oakland; McClure, George, Oakland; Baxter, Frank S., Oakland; Stibbens, F. H., Oakland.

Deaths

BLAIR, E. S., of San Bernardino, Calif., was instantly killed while driving his machine, being struck by a train. Graduate from the University of Michigan 1903. Licensed in California 1903.

BOYD, FRANKLIN P.—Died in San Jose, Calif., December 7, 1920. Was a graduate of Rush Medical School and licensed in California 1904.

CHAMLEY, SAMUEL R.—A graduate of Keokuk Medical College 1884. Dropped dead in Los Angeles, October 28, 1920.

CONRAD, ANDREW O.—Died in Glendale, Calif., December 26, 1920. Was a graduate of the California Medical College, California, 1892. Licensed in 1893.

DODDS, JESSIE BROWN.—A graduate of Northwestern University Woman's Medical School 1887. Licensed in California 1912. Died in Escondido, Calif., November 15, 1920.

FREEMAN, R. E.—Died in San Jose, Calif. Was a graduate of the Hahnemann Medical, Philadelphia, Pa., 1886. Licensed in California 1889.

GORDON, J. S.—A graduate of Physicians and Surgeons, Keokuk, Iowa, 1889. Licensed in California 1901. Died in Los Angeles, January 6, 1921, from injuries received in auto accident.

McBEAN, GUTZWILER ANNA M.—A graduate of University of California 1907. Licensed 1907. Died in Los Angeles, November 13, 1920.